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Plates	1–5	to follow	page	114.
Plate	6	,, ,,	,,	184.
Plates	7–15	,, ,,	,,	236.
Plate	16	,, ,,	,,	284.
Plates	17–28	,, ,,	,,	300.
Plate	29	,, ,,	,,	314.

There are five plates in the Numismatic Supplement; these are separately numbered:

Plates	1-2	to follow	page	N. 20.
Plate	3	,, ,,	,,	N. 28.
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,,	5	,, ,,	,,	N. 74.

The Index to be bound at the end of the volume.

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CONTENTS

INDEXES AND SYNOPSES

Page

HUTTON, J. H. OUTLINE OF CHANG GRAMMAR. Contents ... 1

NUMISMATIC SUPPLEMENT No. XLII for 1929. (No. 2).
Contents in front of the number.

PROCEEDINGS OF THE ASIATIC SOCIETY OF BENGAL, 1928. (No. 3).
Contents in front of the number.

SOHONI, V. V. METEOROLOGICAL NORMALS OF CALCUTTA ... 237

PAPERS

[JOURNAL AND PROCEEDINGS.]

BASU, PROVASH CHANDRA

The anthropometry of the Bhuiyas of Mayurbhanj 157

Head-dress of the hill-tribes of Assam 103

BONNELL, BONAVIS

Geophilid centipedes from the bed of the Cooum river, Madras 181

BRAHMACHARI, UPENDRA NATH

Annual Address, 1928-29 x

BRAHMACHARI, UPENDRA NATH, AND JNANENDRA MOHAN DAS GUPTA

A contribution to the chemistry of certain new aromatic antimonials 301

CHOPRA, B.

On a 'drop-door' fishing trap used in the Myitkyina District, Upper Burma 311

DAS GUPTA, JNANENDRA MOHAN

See Brahmachari, Upendra Nath, and Jnanendra Mohan Das Gupta

FERMOR, L. L.

Carl Diener (1862–1928). [Obituary] cxcviii

GOSWAMI, KUNJA GOVINDA

Satak copper plate grant of King Rāma Siṃha II, of Jaintia of 1809 A.D. 165

HALDER, R. R.

The Chauhāns 185

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Page

HODIVALA, S. H.
Akbarpūr-Tānda and Akbarpūr ... ... N. 54
The chronology of the Zodiacal coins. A postscript ... ... N. 57
The coins bearing the name of Nūr Jahān ... ... N. 59
The Kashmīr coins of Aḥmad Shāh and 'Ālamgīr II ... N. 68
The Multān coins of 'Ālamgīr II ... ... N. 70
Shashkāni or Shashgāni? ... ... N. 46
The unassigned coins of Jalāl Shāh Sultāni ... ... N. 41

HUTTON, J. H.
Outline of Chang grammar 1

HUTTON, J. H.
See Mills, J. P., and J. H. Hutton

JACKSON, SIR S.
Address, 1929 xxxviii

KASHYAP, S. R.
Some geographical observations in Western Tibet 223

KUNDANGAR, K. G.
Āndhra coins in the Lord Irwin Agricultural Museum, Kolhāpūr ... ... N. 30

MAJUMDAR, D. N.
Race and adaptability 149

MARTIN, M. F. C.
Coins exhibited at the annual meeting of the N.S.I. at Benares in January, 1929 ... ... N. 72
Some rare Ghaznavid coins ... ... N. 75

MILLS, J. P., AND J. H. HUTTON
Ancient monoliths of North Cachar 285

MITRA, KALIPADA
Originals and parallels of some Santal folk tales 115

PRASAD, DURGA
A silver coin struck in Nepal in the name of 'Alā-ud-din Muḥammad Shāh Khilji ... ... N. 37

PRASHAD, BAINI
Enrico Brunetti (1862–1927). [Obituary] cxcix

SHASTRI, H. P.
The Ṛg-veda in the making 307

SINGHAL, C. R.
Coins of Nāṣīr Shāh of Gujarāt ... ... N. 40

SINHA, J. C.
Indo-American trade, past and present 201

SOHONI, V. V.
Meteorological normals of Calcutta 237

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Page

STAPLETON, H. E.

A find of 182 silver coins of kings of the Ḥusainī and Sūrī dynasties from Raipārā, *Thāna* Dohar, District Dacca, Eastern Bengal ... ... N. 5

TARAPOREVALA, V. D. B.

Aurangzeb's rupee of Dāru-s-Surūr-i-Burhānpūr ... ... N. 39

THORBURN, P.

Notes on a few rare Indian coins ... ... N. 23

ZACHARIAH, K.

Thucydides II. 3: a possible explanation of certain difficulties 171

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INDEX

JOURNAL AND PROCEEDINGS
ASIATIC SOCIETY OF BENGAL

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1929

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INDEX

A

Accommodation, lix.
1-Acetamino-2-azobenzene-(4 : 4′) distibinate of sodium, 304.
p-Acetyl-amiño-phenyl-stibinate of urea, 304.
Address by the patron, xxxviii.
Agencies, lxvii.
Aḥmad Shāh and 'Ālamgīr II, Kashmir coins of, N. 68.
Aḥmad Shāh Bahādur, half rupee of, N. 25, 29.
Ajayarāja, a Chauhān, 192.
Akbar, rare coin of, N. 25, 28.
Akbarpur-Tānda and Akbarpur, N. 51.
'Ālamgīr II, Multān coins of, N. 70.
'Alāuddīn Fīrūz Shāh, coins of, N. 10.
——Husain Shāh, coins of, N. 6.
Alipore, frequency of heavy rainfall at, 248.
——Observatory, objects of, 238.
America, rapid expansion of her trade with India since the outbreak of the World War, 216.
——reasons of her large profits during the War in Europe, 209.
America and England, competition between, with reference to trade in India, 218.
American trade with India in the 'eighties, 212.
Ancient monoliths of North Cachar, 285.
Āndhra coins in the Lord Irwin Agricultural Museum, Kolhapur, N. 30.
Annandale Memorial Medal, lviii.
——recipient of, clxx.
Annual Address, 1928-29, x.
——Meeting, 1929, proceedings of, v.
——Report, 1928, xlviii.
Anthropology, lxx.
Anthropometry of the Bhuiyas of Mayurbhanj 157.
Aparagāṅgēya, a Chauhān, 194.
Arabic and Persian Mss., Search and Catalogue, lxxii.
Arṇōrāja, a Chauhān, 193.
Aromatic antimonials, chemistry of, 301.
Artemidoros, a drachm of, N. 72.
Artistic and Historical Possessions, lix.
Assam, head-dress of the hill-tribes of, 103.
Associate Members, l.
——list of, clxiv.
Athens, her financial position in, 431, 171.
Aurangzeb 'Ālamgīr I, coins of, N. 25, 28.
Aurangzeb's rupee of Dāru-s-Surūr-i-Burhanpur, N. 39.
Azilises, copper coins of, N. 73.

B

Baḍa Gosāyi II, king of Jaintia, 165.
Balarāma Goswami, 165.
Bālhaṇadēva, a Chauhān, 197.
Baptist Mission Press, lxvii.
Barclay Memorial Medal, lviii.
——recipients of, clxix.
Basu, P. C. Anthropometry of the Bhuiyas of Mayurbhanj, 157.
——Head-dress of the hill-tribes of Assam, 103.
Beloch, on the financial position of Athens with regard to Thucydides' statement, 174.
Bhuiyas of Mayurbhanj, anthropometry of, 157.
Bibliotheca Indica, lxxi.
Birhors, a tribe, causes of their depopulation and evil days, 152, 155.
Blanford, H. F., on description of the climate of Calcutta, 240.
Bolasan monoliths, 287–90.
Bonnell, B. Geophilid centipedes from the bed of the Cooum river, Madras, 181.
Brahmachari, U. N. Annual Address, 1928-29, x.

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Brahmachari, U. N., and J. M. Das Gupta. Chemistry of certain new aromatic antimonials, 301.
Brave jackal, a Santal folklore, with parallels, 144.
Brunetti, E., obituary of, cxcix.
Budget Estimates, 1929, lxvi.
Bullion import into India from America, 207.

C

Calcutta, Blanford's description of the climate of, 240.
——meteorological normals of, 237.
——reference to observational data for, 239.
——some abnormal meteorological records of, 250.
Candrajita Simha, coin of, N. 26, 30.
Catalogue of Sanskrit Mss., lxxiii.
Catching a thief, a Santal folklore, with parallel, 148.
Cavaignac, on the financial position of Athens with reference to Thucydides' account, 173, 176.
Chāhamāna, a Chauhān, 187.
Chāmuṇḍarāja, a Chauhān, 191.
Chandanarāja, a Chauhān, 189.
Chandrarāja (I, II), Chauhāns, 188.
Chang grammar, outline of, 1.
Charitable Raja, a Santal folklore, with parallels and original, 135.
Chauhāns, 185.
——their descent, 185-6.
Chauhāns of Ajmer, 193.
——of Ranthambhōr, 197.
——of Sāmbhar, 187.
Chemistry of certain new aromatic antimonials, 301.
Child with the ears of an ox, a Santal folklore, with parallels, 133.
Chopra, B. 'Drop-door' fishing trap used in the Myitkyina Dist., 311.
Chote and Mote, a Santal folklore, with parallels, 125.
Climate of Calcutta, Blanford's description of, 240.
Coins bearing the name of Nūr Jahān, N. 59.
——exhibited at the Annual Meeting of the N.S.I. at Benares, 1929, N. 72.
——of Nāṣīr Shāh of Gujarat, N. 40.
Committees of Council, lii.
Communications, lxviii.
Condolences, li.
Congratulations, lvii.
Cooum river, Madras, Geophilid centipedes from the bed of, 181.
Corpse of the Raja's son, a Santal folklore, with parallels, 145.
Council, li.
——Proceedings, 1928, abstract of, cix.
Cruel step mother, a Santal folklore, with parallels, 147.

D

Dama La, a pass, 230.
Das Gupta, J. M. *See* Brahmachari, U. N., and J. M. Das Gupta.
Daydreamer, a Santal folklore, with parallels, 126.
Deputations, lvi.
Derebora monoliths, 290-1.
Didiphu, a monastery, 229-30.
Diener, C., obituary of, cxcviii.
Disodium p-aminophenyl stibinate-N-methylene sulphonate, 302.
Disodium-p-stibanilate-N-methylene sulphinate, 303.
Dream, a Santal folk tale, with parallels, 134.
'Drop-door' fishing trap used in the Myitkyina Dist., 311.
Dumb shepherd, a Santal folklore, with parallels, 139.
Durlabharāja (I, II, III), Chauhāns, 188, 190-1.

E

Elliott Gold Medal and Cash, recipients of, clxix.
——Prize for Scientific Research, lviii.
Eukratides, a copper coin of, N. 72.
Euthydemos, a copper coin of, N. 72.
Exchange of Publications, lxvii.
Exhibits, lxviii.
——shown after the Annual Meeting, 1929, xli.
Extortionate sentry, a Santal folklore, with parallel, 126.

F

Farrukhzād, gold coins of, N. 78.
Fellows, election of, amendments to the regulations for, cxcvi.

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Digitized by Arya Samaj Foundation Chennai and eGangotri

Fermor, L. L. Obituary of Carl Diener, cxcviii.
Finance, lxii.
——Committee, lii.
Forest rules, influence of, on the Korwas, 152, 155.
Flycatchers' egg, Caterpillar boy, Dog-bride, Santal folk tales, with parallels, 122.
France and England, war between, with regard to Indo-American trade, 204.

G

Gauri Kund Lake, 233.
General lectures, lxviii.
Geographical observation in Western Tibet, 223.
Geophilid centipedes from the bed of the Cooum river, Madras, 181.
Ghaznavid coins, note on some rare, N. 75.
Ghiyāsu-d-dīn 'Iwaz, coin of, N. 21, 27.
Ghiyāthuddīn Maḥmūd Shāh, III, coins of, N. 11.
Girl who found helpers, a Santal folklore, with parallels, 118.
Gōpēndrarāja, a Chauhān, 188.
Goswami, K. G. Satak copper plate grant of King Rāma Simha II, 165.
Gōvāka, a Chauhān, 188.
Gōvindarāja, a Chauhān, 197.
Gōvindarāja (I, II), Chauhāns, 188, 190.
Grierson, Sir G., awarded Sir William Jones Medal, ix.

H

Halder, R. R. The Chauhāns, 185.
Hammīra, a Chauhān, 198.
Harirāja, a Chauhān, 196.
Head-dress of the hill-tribes of Assam :
Classification, 103.
Decoration, 109.
General description, morphology, technique and texture, 106.
Remarks, 111.
Hill-tribes of Assam, head-dress of, 103.
Hodivala, S. H. Akbarpur-Tānda and Akbarpur, N. 54.
——Chronology of the Zodiacal coins, N. 57.
Hodivala, S. H. Coins bearing the name of Nūr Jahān, N. 59.
——Kashmir coins of Ahmad Shāh and 'Ālamgīr II, N. 68.
——Multān coins of 'Ālamgīr II, N. 70.
——Shashkāni or Shashgāni? N. 46.
——Unassigned coins of Jalal Shāh Sultani, N. 41.
Honorary Fellows, li.
——list of, clxv.
Hot springs at Tirthapuri, 234.
Howard, A., elected Ordinary Fellow, viii.
Ḥusainī and Sūrī dynasties from Raipara, Dacca, note on a find of silver coins of kings of, N. 5.
Hutton, J. H., elected Ordinary Fellow, viii.
——Outline of Chang grammar, 1.
——*See* Mills, J. P., and J. H. Hutton.
Huvishka, a large copper coin of, N. 73.
'Hydra', first American ship to India, 202.
p-Hydroxy-phenyl-stibinate of urea, 305.

I

Indian coins, rare, notes on, N. 23.
——Museum, lvi.
——Science Congress, lv.
Indo-American trade, past and present, 201.
——through Calcutta, 206.
Indo-Aryans and the Dravidians, racial intermixture between, 153.
Institutional Membership, regulations regarding, clxxxiv.
Islām Shāh, coins of, N. 18.

J

Jackson, Sir S., speech by, xxxviii.
Jagadēva, a Chauhān, 193.
Jaintia plains, ancient rulers of, 167.
——influence of Hinduism on the later rulers of, 167.
Jaitrasiṁha, a Chauhān, 198.
Jalal Shāh Sultani, unassigned coins of, N. 41.
Jay treaty, with reference to trade between India and America, 202.

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Jayanti (Janti), a pass, 236.
Jayantiāpura, identified with modern Jaintia, 167.
Jayarāja, a Chauhān, 187.
Jogeshwar's marriage, a Santal folklore, with parallels, 135.

K

Kailas peak, circumambulation of, 228.
Kamala lectureship, lvi.
Kanishka, a large copper coin of, N. 73.
Kartong monoliths, 286.
Kashmir coins of Aḥmad Shāh and 'Ālamgīr II, N. 68.
Kashyap, S. R. Geographical observations in Western Tibet, 223.
Kerosene oil, competition between Russian and American, 213.
Kiangda, a monastery, 228.
Kīrat Singh, coin of, in name of Muḥammad Akbar II, N. 26, 29.
Kobak stones, 287.
Korwas, a tribe, description of, 149, 151-2.
Kundangar, K. G. Āndhra coins in the Lord Irwin Agricultural Museum, Kolhapur, N. 30.
Kungri Bingri, a pass, 236.
Kushan coin, note on a, N. 74.
Kuwar and the raja's daughter, a Santal folklore, with parallels, 133.
Kya myon, a 'drop-door' fishing trap, 311–3.

L

Leopard outwitted, a Santal folklore, with parallels, 131.
Library, lx.
Life Members, chronological list of, clxiii.
Lita and his animals, a Santal folklore, with parallels, 115.

M

Maclagan, Sir E., elected Ordinary Fellow, viii.
Majumdar, D. N. Race and adaptability, 149.
Malangpa monoliths and sitting stones in its neighbourhood, 291–4.
Manasarovar and Rakastal lakes, channel between, 225.
Manṣūr II bin Nūḥ, a dinār of, N. 75.
Martin, M. F. C. Coins exhibited at the Annual Meeting of the N.S.I. at Benares, 1929, N. 72.
——Some rare Ghaznavid coins, N. 75.
Mas'aūd I, a coin of, N. 77.
Medals and Prizes, lviii.
Medical Section, lxxi.
——Meetings, 1928, proceedings of, cci.
Meetings, lxviii.
Members, loss of, 1928, clxvii.
——absent from India, clxvi.
Membership Statistics, lxxvi.
Meteorological normals of Calcutta, 237.
——notes on tables of, 242.
——tables of, 251.
Meyer, Ed., on Athenian financial resources with reference to Thucydides' statement, 174.
Mills, J. P., and J. H. Hutton. Ancient monoliths of North Cachar, 285.
Miser's servant, Raja's son and the merchant's son, Wealth or wisdom, Santal folk tales, with parallels, 124.
Mitra, K. P. Originals and parallels of some Santal folk tales, 115.
Monoliths of North Cachar:
Erection and construction of, 296-7.
Particular purpose of, 298–300.
Muḥammad Bin Sām, coin of, N. 24, 27.
Muḥammad Shāh, half rupee of, N. 25, 28.
Multān coins of 'Ālamgīr II, N. 70.
Myitkyina Dist., 'drop-door' fishing trap used in, 311.

N

Nāṣīr Shāh of Gujarat, coins of, N. 40.
Nāṣiruddīn Naṣrat Shāh, coins of, N. 8.
Naṣr, brother of Maḥmūd of Ghazni, a coin of, N. 76.
Natural History: biology, lxix.
——physical sciences, lxx.
North Cachar, ancient monoliths of, 285.
——implements, 295-6.

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Numismatics, lxxiii.
Nūr Jahān, coins bearing the name of, N. 59.
Nyandiphu, a monastery, 228-9.

O

Obituary, li.
——notices, cxcviii.
Office, liii.
——Bearers, lii.
Officers and Members of Council, 1928, cxxxi.
——1929, xl, cxxxii.
Ordinary Fellows, l.
——list of, clxiv.
Ordinary Members, xlix.
——chronological list of, clvii.
——list of, cxxxiii.
Ordinary Monthly Meetings, 1928, proceedings of, clxxi.
Originals and parallels of some Santal folk tales, 115.
Outline of Chang grammar, 1.

P

Parvat Ray, ruler of the Jaintia plains, 167.
Patron, address by, xxxviii.
Patrons, list of, cxxx.
Philology, lxix.
Phraates II, a drachm of, N. 74.
Polias or Rajbansis, a mixed people, 153.
Prālhādadēva, a Chauhān, 197.
Prasad, B. Obituary of Enrico Brunetti, cxcix.
Prasad, D. A silver coin struck in Nepal in the name of 'Alā-ud-din Muḥammad Shāh Khilji, N. 37.
Presentations, Donations, and Legacies, lix.
Prince who acquired wisdom, a Santal folklore, with parallels, 123.
Pṛithvībhaṭa, a Chauhān, 195.
Pṛithvīrāja (I, II, III), Chauhāns, 192, 195-6.
Publications, lxvii.
——list of, 1928, lxxvii.

Q

Qutbu-d-dinAibak (?), coin of, N. 24, 27.

R

Race and adaptability, 149.
Racial intermixture, discussion about, 153.
Rāghava Pāndavīya, date of composition of, 166.
Raibar and the leopard, a Santal folklore, with parallel, 127.
Raipara, Dacca, note on a find of silver coins of kings of the Ḥusainī and Sūrī dynasties from, N. 5.
Raja who went to heaven, a Santal folklore, with parallels, 142.
Raja's son and the merchant's son, Broken friendship, Santal folk tales, with parallels, 146.
Rāma Govinda Goswami, 165.
Rāma Siṃha II, king, Satak copper plate grant of, 165.
Rām Singh, coin of, with name of Queen Victoria, N. 26, 29.
Receipts and Disbursements, 1928, lxxix.
Ṛg-veda, shape of, before it was compiled in the Saṃhitā form, 307.
——in the making, 307.
Rules and Regulations, lv.

S

Sāmantarāja, a Chauhān, 187.
Santal folk tales, originals and parallels of, 115.
Satak copper plate grant of King Rāma Siṃha II, 165.
——reading of the plate with an English translation, 168.
Shāh 'Ālam II, coin of, N. 25, 29.
——copper of Najībābād, N. 23.
Sham child, a Santal folklore, with parallels, 143.
Shashkāni or Shashgāni? N. 46.
Shastri, H. P., nominee to serve on Kamala Lectureship Committee, lvi, clxxviii.
——representative on Board of Trustees, Ind. Mus., lvi.
——Ṛg-veda in the making, 307.
Sher Shāh, coins of, N. 12.
Silver coin struck in Nepal in the name of 'Alā-ud-din Muḥammad Shāh Khilji, N. 37.
Siṁharāja, a Chauhān, 189.
Singhal, C. R. Coins of Nāṣīr Shāh of Gujarat, N. 40.
Sinha, J. C. Indo-American trade, past and present, 201.
Sir William Jones Memorial Medal, lviii.
——amendments to the regulations for, cxcvii.
——recipient of, clxx.

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Sirdār Singh, coin of, with name of King Edward VII, N. 26, 30.
Sit and Lakhan, a Santal folklore, with parallels, 140.
Social functions, lviii.
Society's activities, early members, and future needs, x.
——Premises and Property, lix.
Sohoni, V. V. Meteorological normals of Calcutta, 237.
Sōmēśvara, a Chauhān, 195.
Spalarises, a square copper coin of, N. 73.
Spanling and his uncles, Mongoose boy, Santal folk tales, with parallels, 148.
Special Honorary Centenary Members, l.
——list of, clxv.
Stapleton, H. E. A find of 182 silver coins of kings of the Ḥusainī and Sūrī dynasties from Raipara, Dacca, N. 5.
Story told by a Hindu, a Santal folklore, with parallel, 127.
Sutlej, source of, 225.

T

Tāju-d-din Yalduz, a copper coin of, N. 75.
Taraporevala, V. D. B. Aurangzeb's rupee of Dāru-s-Surūr-i-Burhanpur, N. 39.
Thorburn, P. Notes on a few rare Indian coins, N. 23.
Thucydides II. 13, on the average annual income of Athens from tribute, 175.
——incredibility of his statement as to the financial position of Athens, 173.
——a possible explanation of certain difficulties, 171.
Tiger's bride, a Santal folklore, with parallels, 132.
Tipi and Tepa, a Santal folklore, with parallels, 131.
Tirthapuri, hot springs at, 234.
Tribal extinction, discussion about, 150.
Two wives, a Santal folklore, with parallels, 138.

U

Unassigned coins of Jalal Shāh Sultani, N. 41.
Unfaithful wife, a Santal folklore, with parallel, 148.
Ungrateful snake, a Santal folklore, with parallels and original, 128.
Unta Dhura, a pass, 236.
Urea p-amino-phenyl-stibinate-N-methylene sulphonate of sodium, 302-3.

V

Vāgbhaṭa, a Chauhān, 197.
Vaiṣṇavādhikārin. *See* Balarāma Goswami.
Vākpatirāja (I, II), Chauhāns, 189 90.
Vāsudēva, a Chauhān, 187.
Vigraharāja (I, II, III, IV), Chauhāns, 188-9, 191, 194.
Vīranārāyaṇa, a Chauhān, 197.
Vīryarāma, a Chauhān, 191.
Visits, lvii.
Volagases I, a barbarous drachm of (?), N. 74.

W

Western Tibet, geographical observations in, 223.
——importance of, 223-4.
Wife who could not keep a secret, Tell-tale wife, Santal folk tales, with parallels, 142.
Wife who would not be beaten, a Santal folklore, with parallels, 119.

Z

Zachariah, K. Thucydides II. 13: a possible explanation of certain difficulties, 171.
Zeionises, a tetradrachm of, N. 73.
Zodiacal coins, chronology of, N. 57.
Zuntu monastery, 230.

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Outline of Chang Grammar.

By J. H. HUTTON.

CONTENTS.

	Page		Page
Preface	3	Interrogatives	40
Alphabet	7	Adverbs	41
Tone	9	Conjunctions	43
Numerals	10	Interjections	43
Articles	12	Syntax	43
Noun	12	Specimens of the Chang language	45
Adjective	15	Terms of Relations ..	50
Pronouns	16	Greetings	53
Verb	19	English-Chang Vocabulary ..	55
Examples of use of verbs ..	37	Addenda	101
Compound Verbs	40		

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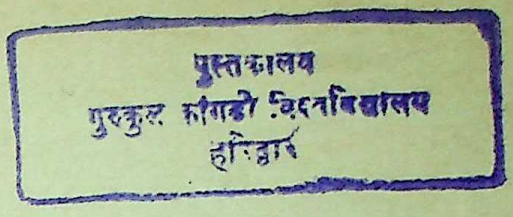

PREFACE.

The Chang tribe is one of those Naga tribes which occupy the hinterland, as it were, of the Naga Hills district, stretching back to the high range, which divides Assam from Burma. Only two small Chang villages of mixed population fall far enough west to come within the boundary of the administered district, the bulk of the tribe being situated in the area of loose political control which forms a buffer between the district and the still unknown tribes which occupy the slopes of the high range on both the Assam and Burma sides.

As a tribe the Changs are parvenus. About eleven generations ago, according to their own reckoning, the present village of Tuensang, the fountain head of the tribe, was founded by elements coming from the south, from the Central Naga tribe known as Yimtsungr, in combination with Konyaks of the eastern Naga group from the defunct village of Changsung, situated to the north-east of what is now Tuensang. This mixture of elements is very patent in Chang culture. Some bury their dead, as the Yimtsungr do, while others expose their corpses on platforms in the Konyak manner; the village of Tuensang is composed of four clans grouped two by two who indulge in the most bitter faction fights; the Ung clan corresponding to the Ang, or chiefly, clan of the Konyak tribes and the Pongen, the doyen of the three phratries of the Ao tribe, is regarded with contempt and aversion, but nevertheless performs certain priestly functions and seems to be in some way credited with magical knowledge; the warrior's tattoo patterns are of Konyak affinities, but their breech clout is Yimtsungr, and so forth. But although the two cultures are as yet incompletely fused, the people themselves have blended completely, and the physical type which has resulted from the hybridization of the two tribes is not only very pronounced, but is excessively vigorous. In all directions the parent village of Tuensang (known to the Aos as Mozungjami) has thrown out offshoots which have conquered and practically absorbed the neighbouring tribes, and which have spread the influence and the mixed culture of the conquerors even beyond the area of actual subjugation, so that Sangtam villages to the south and Phom villages to the north are becoming assimilated to the Changs in between. Eastward the expanding Changs have come up against the very warlike Kalyo-Kengyu tribe that lives on the inhospitable heights of the Saramati range, and, for the time being, their expansion has been brought to a stop. Westwards the Changs started by decimating the villages of their Ao neighbours, and followed by annexing their lands and occupying their sites and allowing

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those of the former owners that survived to come back as subjects, and this process was only stopped by the British occupation of the Ao country. The Changs, desperately democratic in the parent village of Tuensang, have, outside it, a chiefly polity, and the chief is no *roi fainéant*. Generally speaking, however, the culture is more Yimtsung than Konyak. The physical type is distinctive, the majority of Changs being tall out of proportion to their girth and markedly long in the leg in proportion to the trunk. Their heads, in so far as I have taken measurements, show even more decided dolichocephaly than those of the general run of Konyaks, but give a much lower nasal index.

The language is less hybrid than the blood, as the Konyak element seems to have predominated in speech in proportion as it has succumbed in culture. Sir George Grierson finds the most nearly allied tongue to be that of the Konyak village of Zu, or "Banfera," much further north, but the dialects of the intervening Konyak villages are still mostly unrecorded, and it is probable that there are Konyak dialects akin to Chang very much near the Chang tribal area than Zu. Nothing is known, beyond a few odd words, of the Yimtsung language, but that the element is not entirely absent from the Chang language is to be inferred from the occurrence of such words as *milishen*, for instance, for 'rainbow,' the almost identical word (*milesü*) occurring in the Sema Naga language where it is a loan word probably from Yimtsung or Sangtam. The extent however, to which the Konyak element has prevailed in Chang speech is to be inferred from the absence of *R*, which is regularly used by the Yimtsung but which the Konyak group cannot pronounce at all. A little miscellaneous information as to the Chang tribe will be found in Appendix III of *The Angami Nagas* (Macmillan, 1921) and in my diaries of "*Two Tours in the unadministered area east of the Naga Hills*" (Asiatic Society of Bengal, Memoirs, XI, 1921), but the only notice of the Chang language that has hitherto appeared is in Sir G. Grierson's *Linguistic Survey of India*, vol. III, pt. ii., where a vocabulary of specimen words is given together with some illustrative sentences. Unfortunately these sentences could only be recorded (by the late Mr. Noel Williamson, then Subdivisional Officer of Mokokchung) by means of an Ao interpreter from a Chang who spoke Ao, and this devious method, though well enough when merely the name of a familiar object was required, led through misunderstandings, no doubt on both sides, to considerable inaccuracies in recording sentences which occasionally bear little relation to the English they were intended to translate. The rough outline of the grammar and the limited vocabulary that follow here were the results of the writer's efforts to acquire the Chang language at Mokokchung between 1915 and 1917, and he is fully conscious of their shortcomings, but hopes that their publication is

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justified by the fact that up to the present no other attempts have been made to learn the tongue or to give any account of it. The language is a difficult one not only by reason of its tones but owing to the fact that the negative of the verb is formed by prefixing a single vowel, and that where the root already begins with a vowel, as it frequently does, the negative is merged in the root, often having merely the effect of a subtle difference in the length of the latter vowel which the writer, at any rate, has found extremely difficult to discriminate when listening to continuous speech. It is easy, for instance, to write *ŏlenta*, 'is glad', *ōlenta*, 'is sorry,' but to differentiate them as spoken by a Chang tribesman needs a very accurate ear. An apology is also needed for the failure to make any attempt at the systematic indication of tones. When the record was made, Sir G. Grierson's note *On the Representation of Tones in Oriental Languages* was, if published, unknown to the writer, and he has had no opportunity since of rewriting the whole with the proper tones, and it is extremely improbable that such an opportunity would ever recur to him now. The record is therefore published for what it is worth in the hopes that it may serve temporarily to fill a gap in our knowledge of Tibeto-Burman languages and prove of use to these officers who may have dealings with one of the more important Naga tribes, and instigate by its faults the production of a fuller and more perfect account in the future.

J. H. H.

KOHIMA,
May, 1929.

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CHANG ALPHABET.

Vowels.

a .. { long (ā) .. as in "father", (*e.g.* **māng**='mind')
sharp (à) .. as in "fatter", (*e.g.* **yànashi**=go down)
short (ă) .. as u in "flutter" (*e.g.* **măng**=body)

N.B.—An indeterminate **a** similar to the **a** in the German **mann** is very common, and is perhaps the normal value of a in Chang Naga, *e.g.* the **a** in the word **Chang** itself.

e .. { long (ē) .. as **a** in "fate" (*e.g.* **lēke**=took)
short (ĕ) .. as in "fetter" (**lĕnashi**=explain)

i .. { long (ī) .. as in "machine" (**phīashi**=ask)
short (ĭ) .. as in "mince" (**ĭnashi**=give to drink)

o .. { long (ō) .. as in "go" (**lōta**=is coming)
short (ŏ) .. as in "got" (**uyŏk**=spittle)
broad (ô) .. as in (?) "gone"
(Not as broad as **oa** in that word) (**môli**=medicine)

u .. { long (ū) .. as **oo** in "pool" (**chung**=many)
short (ŭ) .. as in "pull". (**khŭn**=hat)

ü .. somewhat resembling the **u** sound in churn or burn, but shorter and perhaps approximating sometimes to the **ü** in German **brüder**, (**mügh**=sky).

Diphthongs.

ai as in "aisle" (**maike**=is well)
au as ow in "cow", (**not** as in "caul" or "maul") (**ngau**=fish)
ao slightly longer than **au** as **ow** in "howl" (**ao**=bird)
ei is **ē** lengthened by **ĭ** and slightly longer than **ē** (**tei**=water)
ie ,, **ī** ,, ,, **ĕ** ,, ,, ,, **ī** (**chie**=one)
ou ,, **ō** ,, ,, **ŭ** ,, ,, ,, **ō** (**sou**=ghost)
oa as in "boa" "Troad", **oe** as in "poem", but the two vowels in each case sometimes slurred almost into one sound; **ua, uo** also on the same principle.

N.B.—The difference between **ō** and **ou** and between **ī** and **ei** frequently depends merely on the rate at which the word is spoken, and **ou** and **ei** in simple words usually become **ō** and **ē** in compounds unless they occur in the final syllable of the compound word.

Consonants—(*a*) simple:—

B as in English. *e.g.* (**bā**="garden")
D dental. ,, (**dūtchi**="oil")
F as in English. ,, (**fulabu**="will place")

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G hard, as in English 'gun', (*e.g.* **gulabu**="will sweep"); **ng** as in "singing", (*e.g.* **ngôk**="hoof"), never as in "finger."
H as in English, but pronounced where written, (*e.g.* **hin**="crab").
J as in English 'joy', (*e.g.* **jămpăn**="sept").
K as in English, (*e.g.* **kān**="wild cat", *felis bengalensis*).
L ,, ,, ,, (,, **lulu**="apart").
M ,, ,, ,, (,, **mĭn**="ant").
N ,, ,, ,, (,, **nei**="cloth").
P ,, ,, ,, (,, **piapoa**="anciently").
R probably non-existent in pure Chang. If found sounded as in English 'very'—(*e.g.* **kuk-kur-gu**="cock-a-doodle-doo").
S sibilant, as in English 'sense' (*e.g.* **sāp**="bear").
T dental, (*e.g.* **tāk**="back" (n.).
V as in English, (,, **savesai**="confusion").
W ,, ,, ,, (,, **wo**="axe").
Y always consonantal, never a mere vowel, (*e.g.* **yei**="breeze").
Z as in English (*e.g.* **lilisizepu**="swashbuckler").

N.B.—D and V are uncommon, F and Z very rare indeed. P, B. & V are often inter-changed, particularly P & B, between which the Chang ear does not seem to distinguish, as also in the case of D & T, G & K, J and CH, and often CH & SH.

(*b*) aspirated :—

CH as in English 'church', (*e.g.* **chanyu**="sun").
GH guttural and lightly sounded, the G hardly at all; never carried on to the subsequent syllable, (e.g. **lügh**="rope").
KH as in English 'workhouse', (*e.g.* **khu**="head").
K̲H̲ highly aspirate as CH in Scottish 'loch' or GH in Irish, (*e.g.* **k̲h̲ügh**="hardship").
PH as in English 'uphold', not as F, (*e.g.* **phōpan**="in excess").
SH as in English 'shape', (*e.g.* **shāp**="hoe").
TH ,, ,, ,, 'priesthood', (*e.g.* **thŭnyū**="elephant").
ZH if found, as S in English 'treasure' or J in French '*jour*'.
Other aspirated consonants on the analogy of PH and TH.

Signs.

An **apostrophe** thus —' signifies a letter (ordinarily a vowel) omitted.
Reversed thus—' it signifies a pause in enunciation.

The diaeresis (··) is used, except in the case of the vowel **ü**, to mark the separate pronunciation of contiguous vowels ordinarily forming a diphthong.

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Euphony.

Certain consonants change in the Chang language when following or preceding certain other consonants.

B after G or P becomes P
G after M becomes B
G before L sometimes becomes K
K after M or P becomes P
e.g. **chămpa** for **chăm-ka** "From (the) house"
hăp-pē for **hăp-kē** "know", "found", "got"
K after G sometimes becomes G. e.g. **sug-gē** for **sug-kē**
K before S frequently becomes P
K before B or P sometimes becomes M
T before K often becomes K *e.g.* **asăkkē** for **asătkē** "did not sit".

TONE.

As in all Naga languages difference of meaning depending on the tone in which a word is spoken is a fertile source of difficulty. In Chang, as in Sema, three tones may be distinguished, but the difference is very often so slight as to be indistinguishable to any but a Chang. A few instances are given, *h* standing for 'high', *m* for 'medium', and *l* for 'low' pitch :—

mügh, *h*	=	sky	*l* = hunger.
chăm, *h*	=	salt	*l* = house.
tei, *h*	=	there	*l* = water.
wan, *m*	=	fire	*l* = winnower.
lāng, *m*	=	stone	*l* = horn.
uwi, *m*	=	soap ; nasal excretion	*l* = fur.

Likewise the difference between **kăm** (*h*) = "do" and **kămm** *l* = "forbid" is very slight.

There are also words with two meanings where there is no difference in tone, *e.g.* :—

lăng	(1) thatch,	(2) rain.
măng	(1) shadow,	(2) dream.
săt	(1) dung,	(2) eight, (3) to sit.
săn	(1) liver,	(2) breast.
lam	(1) path,	(2) indigo (*N.B.*—**lam** (*h*)=otter).
chak	(1) dish,	(2) thorn.
shi	(1) hunt,	(2) sew.

There are also many different words whose difference depends solely on a very slight change of vowel such as **chie** = "one", **chī** = "brass-armlet", **chĭ** = "not so" **māng** = heart, mind, **măng** = body.

The verbs **hau** = "go" and **hau** = "hit" (a mark), as well

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as hau = "gather up" are pronounced almost identically in the positive use, but the first makes as its negative oho and the two latter uhau. Hau, the noun, = "sinew".

NUMERALS.

1 Chie	140 Sau-nyet
2 Nyi	150 Anchin'săt
3 Săm	160 Sau-săt
4 Lei	170 Anchin'guh
5 Ngau	180 Sau-guh
6 Lăk	190 Anchini 'an
7 Nyet	200 Sau'an
8 Săt	201 Sau'an-to-chie
9 Guh	210 Sau'an-to-an
10 An	220 Sau'an-to-sauchie
11 Antăkchie	300 Sau'an-to-saungau
12 Antăknyi	310 Sau'an-to-anchin'lak
19 Antakguh	400 Sau'an-nyini
20 Sau-chie	401 Sau'an-nyini lan chie
21 Sau-to-chie	402 Sau'an-nyini lan ni (*or* păn ni)
22 Sau-to-nyi	
29 Sau-to-guh	410 Sau'an-nyini lan an (*or* pan an *or* to-an).
30 Kujin	
31 Kujin-to-chie	420 Sau'an-nyini lan sauchie
40 Sau-nyi	500 Sau'an-nyini lan saungau
50 An-chin'-săm	600 Sau'an-săm ni
51 An-chin'-săm-to-chie	700 Sau'an-samni lan saungau
60 Sau-săm	800 Sau'an-leini
70 Anchin'lei	900 Sau'an-leini lan saungau
80 Sau-lei	1,000 Sau'an-ngauni
90 Anchiningau	1,100 Sau'an-ngauni lan sau-ngau
100 Sau-ngau	1,200 Sau'an-lăkni
101 Saungau-to-chie	1,300 Sau'an-lăkni lan saungau
110 Anchin'lak	1,400 Sau'an-nyetni
111 Anchin'lak-to-chie	1,600 Sau'an-săt ni
120 Sau-lak	1,800 Sau'an-guhni
130 Anchin'nyet	2,000 Sau'an anni (*or* anli)

It will be noticed from the list of the above numerals that the Chang numeration is based on a double system. Up to 19 the reckoning is absolutely straight-forward, then we start with "one score" the basis of calculation up to 200, except for the thirties. Thirty has a term of its own, Kujin, after which we start off with "two score," the denominators of double figures from 40 upwards being calculated with the score as a basis while the numerators are reckoned as usual by tens. The odd multiples of ten that fall between the scores are reck-

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oned back from the nearest score in excess of them. Thus for 40 we have "two score" and for sixty "three score" while fifty in between is "ten short of three (score)." This goes on naturally up to two hundred in regular sequence of tens instead of up to 100 as in English. From this point "ten score" is the starting point for calculation. After 200 the numerals merely repeat themselves by adding so much to "ten-score" up to 400. Thus three hundred is "ten-score and five-score," when 399 will be "ten score, and ten short of ten (score), and nine". 400 is double "ten score" and the reckoning goes on as in the case of ten score figures, up to "double ten score and five score" (500), "thrice ten score" "(600), thrice ten score and five score" (700) and so on up to 1,000, "five times ten score" and 2,000, "ten times ten score." Provided it is remembered that up to 200 the odd tens are reckoned from the score in excess of them the system is simple enough as after 200 ten score is added to and multiplied but there is no counting backwards except in so far as numerals already fixed are employed; that is to say that, though fifty is reckoned back from 60 being the "ten short of three (score)," 500 is not reckoned back from 600 but is merely 400 and 100, "twice ten score and five score."

The word **păm**-"a piece," "a head," (before a simple *n* it becomes **păn**) is used with numeral, *e.g.*, "I have five cows" **ngeibu masu pam ngau kia** (my cows heads five are), 2 rupees—**Nām pan nyi.**

Ordinals.

1st **shangbu**
2nd **nyibu** or **nyipobu**
3rd **sambu** or **sampobu**
etc.

'First' the adverb,=**shang** or **shanga.**

'First' the adjective (**shangbu**) becomes **shangpou** or **shangnyu** if a male or female is definitely indicated.

'Last'=**paibu** which is used exactly like **shangbu.**

Those in between the first and the last are called **chinyuk-abu** or **aulangkabu.**

'I arrived first'—**ngo shang sügh-ke.**

'In the women's dance Aleng was first'—**Yaksa-tompuka Aleng shangnyu.**

Distributives.

Singly—**chie chie**
By twos—**nyi nyi,**
etc.

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Numeral Adverbs.

Once—**chiong**
Twice—**nyini**
Thrice—**samni**
Four times—**leini**
Etc.

ARTICLE.

There is no article strictly speaking in Chang Naga. For the indefinite article the numeral **chie,** "one," is used, following the noun, *e.g.* **măt chie** = "a man." For the definite article **ho,** "this," and **khwo,** "that," are used, preceding the noun.

NOUN.

Unlike the Naga languages of the western group the Chang noun does not retain any particle prefixed to the noun (Grierson says that this is the survival of an obsolete possessive) and dropped when the noun is used in conjuction with governing words. There is nothing in Chang answering to the prefix **te**—common in Angami or **a-** which is universal in Sema, except in the case of the names of some relatives. These all begin with a superfluous **a-** which disappears when the word is governed by a possessive pronoun *e.g.* **apo** = father, **kă-po** = my father (used in address and also speaking to a third person).

jai, ajei = elder brother, **kā-jei** = your elder brother.

Gender.

For words denoting human beings distinct forms are used, though the particle **pō** or **pou** is distinctive of males and **nyu** of females where they are used. *E.g.*

pōsu = a man (as opposed to woman) **yaksa** = a woman.
pōkwa = an elderly man, **nyukwa** = an elderly woman.
paushipou = an old man, **paushinyu** an old woman.
heshou = a boy or young man, **mătei** = a girl.

In the case of animals separate terminations are in use to distinguish males, females that have given birth to young, and females that have not so given birth, *viz.* :—

Male	Female	Female that has not given birth
-pāng	**-pi**	**-sawanyu**
-lo	**-nyu.**	

The use of the alternative forms for the first two is governed by conventions which generally speaking do not seem based

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on anything but caprice, though the masculine form in **-pāng** seems to be always used of deer, cattle, and larger mammals.

Examples :—

cow=**masu** > **masupang***	**masupi**	**masusawanyu**	
	a bull	a cow	a cow that has not calved
mithan=**ngo** > **ngopang**	**ngopi** or **ngonyu**	**ngosawanyu**	
	a bull mithan	a cow mithan	a cow mithan that has never calved.
dog=**kei** > **keilo**	**keinyu**	**keisawanyu**	
	a dog	a bitch	a bitch that has never whelped.
fowl=**aunok** > **aupang**	**aunyu**	**ausan'** (for **ausawanyu**)	
	a cock	a hen	a pullet

* As well as **masupang** for 'a bull,' **masupangsu** is used if the bull has a developed hump.

To denote the young male of any species—**shou** is suffixed to the masculine form, thus a young bull=**masupangshou.** For the quite young offspring, the same **shou** (originally='son') or **shōshou** is suffixed to the simple form of the noun; thus **ngoshou** = a mithun calf (of either sex), **masushoshou** = a calf.

Number.

Separate form for the dual and plural numbers exist in the Chang language in the case of the personal pronouns, and are given under that heading. In the case of ordinary nouns **-ong** is added to make a collective plural and **shoung** is also used with similar effect, though neither are necessarily employed if the sense is clear without. **Shoung** is really in itself a noun denoting a company or "group," and may also be suffixed to the plural forms of the personal pronouns. When **ong** is used, it is placed after the case inflection, but **shoung** before it :—
I will feed the dogs = **keil'ong auklam** (not **keiongla**).

Măt-shoung loake = men came.
Hawan-shoungto ngampe = I beat them.

Case.

Unlike the Western Naga languages, Chang has a definite series of case inflexions, consisting of the following suffixes :—

Agentive—e, ye	by
Genitive—bu, ebu, webu,	of
Locative—a	on, at
Ablative—ka	from
Dative—la	for, to
Accusative—to, cha	to.

The **Agentive** case is used for the subject of all verbs regarded as transitive, which includes verbs of speaking even

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though no object is expressed, as well as others which Europeans would scarcely assign to that category.

The **Genitive** termination is added to the Agentive in some cases, that of the pronoun of the first person for instance, while the termination **-bu** signifying possession is used to form adjectives and some parts of verbs as well as the Genitive of nouns.

The **Locative** case denotes rest at a place.

The **Ablative** case denotes separation from the noun, (accompaniment is expressed by the use of the post-position **paito**).

The **Dative** case is used of the person or thing for the benefit of which something is done, or to whom something is given or spoken, though the accusative is also used for this latter.

The **Accusative** case denotes the object of a transitive verb though the inflection is by no means always used. It is also the case of the place (but not the person) to which motion is directed; (with the person towards whom motion takes place the postposition **chungto** is used).

Numerals used with the noun precede the case inflection, e.g. :—

'I will feed two dogs' = **kei-ni-la auklam** (not **keila-ni**).

Examples :—

Nominative—'I will go' = **ngo haulabu.**
'The mynah flew' = **ausung pia.**
Agentive—'I will speak' = **ngē laulam.**
'Ongli will speak' = **Ongli laulam** (no inflection).
'The mynah will speak' = **ausunge laulam.**
Genitive—'My word' = **ngēbu ngügh.**
'The woman's dog' = **yaksabu kei.**
Locative—'It is in the house' = **chăma kia.**
'Yanchu is at Yongemdi' = **Yanchu Yongemdi-a kia**
Ablative—'I got (it) from Mongko' = **ngē Mŏngkōka hăppē**
'he brought (it) from the house' = **haue chămpa songbakē.** (*N.B.*—**chăm-pa** for **chămka**).
Dative—'Gave it to him' = **haula kūkē.**
'I brought it for Ongli' = **ngē Onglila songbakē.**
Accusative—'(He) hit me' = **kăto ngămpē**
'(he) spoke to me' = **kăto laukē**
'(he) went to his house' = **hauebu chămto haukē.**

Example :—

Declension of **sang.**

Nominative	**sang**—Village.
Agentive	**sange**—(by) the village.
Genitive	**sangbu**—of the village.
Locative	**sanga**—at the village.

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Ablative	**sangka**—from the village.
Dative	**sangla**—for the village.
Accusative	**sangto**—to the village.

ADJECTIVE.

The adjective follows the noun which it qualifies and may usually be distinguished from it at once by the adjectival termination **-bu** (or **-pu**) *e.g.*, **maibu**=good, **hambu** = small, **yangpu**=large, **nakübu**=black, **săklangbu**=red, **tupaibu**= white.

N.B.—The final **-u** is often aspirated as though it were **uh**, though this is not always noticeable in conversation.

When, however, the adjective is enclitic or is used as an appellation in the vocative, the termination **-bu** is usually dropped.

e.g.

mătnak, **matnakü**=a black man.
mătsak=a red man.
mătthu (or **mătthupaibu**)=a white man.
mătmai=a proper man, *i.e.*, a Naga,
(as opposed to a stranger from the direction of Assam or Burma).

Nakü='o black one!'

Ordinarily the adjective follows the noun qualified *e.g.*
In hambu songba="bring the small dao (in)".
Ngebuh kei tupaibu="my dog is white" (or "my white dog").

Comparison.

When two objects are compared, the one with which the comparison is made is followed by the word **tauchi** or **tochi**= 'than', *e. g.*, 'my dog is better than yours'=**kābu kei-tauchi**
your dog than
ngebu kei mai-ke.
my dog is-good.

The superlative is expressed by using some such term as **aibu**='very,' or **păndoto** (<**pando**='all'), thus:—

'His dog is best of all'=**hauebu kei pandoto maike**
his dog of all is good
(or **aibu maike**).
very good is.

Intensive forms may be formed from adjectives by the addition of certain suffixes such as **-shou** (lit.='son'), **-tam**, **-shet** (lit.='spoilt'), etc.

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e.g.

maibu=good > maibu-shou, maibu-tam } =very good.

akpu=sharp > akpu-tam, akpu-shou } =very sharp.

amai=bad > amai-shet=very bad.

N.B.—These suffixes are idiomatic. "amai-shou" or "amai tam" could not be used any more than one could say "maibu-shet."

PRONOUNS.

Personal Pronouns:—These are declined in both singular, dual and plural numbers, the Locative case being naturally not in use. The dual and plural of the first person have different forms according as the person addressed is included or excluded.

First Person.

	singular	*dual*		*plural*	
	I	We two		We	
		Inclusive	*Exclusive*	*Inclusive*	*Exclusive*
Nominative	ngo	săji (or săti)	kăsi	sănn	kănn
Agentive	ngē	săjihame	kăse	săne	kăne
Genitive	ngebu, kăbu	săjibu	kăsibu	sănebu	kănebu
Ablative	kăka	săjika	kăsika	săneka	kăneka
Dative	kăla	săjila	kăsila	sănela	kăneka
Accusative	kăto	săjito	kăsito	săneto	kăneto

N.B.—In the first person the form kă has been used for the root, but kü is used in some villages, and would be more convenient for general use if the long and short marks were not used.

The form săji (or săti) is used when the person addressed is included, kăsi when he is not; similarly sănn is used when the person spoken to is so included and kănn when he is not.

Second Person.

Nominative	nô	kāsi	kānn
Agentive	nyi	kāsi-hame, kāse	kāne
Genitive	kābu	kāsibu	kānebu
Ablative	kāka	kāsika	kānka
Dative	kāla	kāsila	kānla
Accusative	kāto	kāsito	kānto

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Third Person.

Nominative	**hau**	**hausi**	**hauan**
Agentive	**haue**	**hausi-hame**	**hauane**
Genitive	**hauebu**	**hausibu**	**hauanebu**
Ablative	**hauka**	**hausika**	**hauanka**
Dative	**haula**	**hausila**	**hauanla**
Accusative	**hauto**	**hausito**	**hauanto**

Sometimes the nominative is used where an accusative might he expected, *e.g.*, with verbs of calling, thus "call me" =**ngo** (not **kăto**) **ngake**; "I did not call you"=**nge nô** (not **kāto**) **angake**, but it is also found with verbs implying a very pronounced action, *e.g.* **nge nô haitilabu** – "I will kill you," but here the verb is a causative form of **hai-**="die," and does not describe an action which passes to the object, merely meaning "cause to die."

In this respect the pronoun resembles the proper name which would take no case inflection in such circumstances, in the case of the proper name no doubt because the idea of direct speech is retained in what amounts to indirect speech.

Pronominal Adjectives.

First person	**kă-**, or **kü**	=my, our
Second person	**kā–**	=your
Third person	**hau-**	=his

These may be used at any rate in the first two persons, of both singular and plural pronouns, but if it is desired to make the plural quite clear, the plural genitive of the pronoun is used. Contrariwise the singular genitive of the personal pronoun is also used to distinguish definitely the singular form. Before nouns beginning with a vowel also the genitive form of the personal pronoun is usually employed. *e.g.*

My dog=**kă-kei** or **ngebu kei.**
our dog=**sănebu kei.**
your bird=**kābu ao** (**kā'ao** may also be used).
his dog=**hau-kei.**
his bird=**hauebu ao.**
their bird=**hauanebu ao.**

Demonstrative Pronoun.

Singular
This=**ho** That=**khwo**

These pronouns are usually prefixed to the noun and when emphasis is desired are suffixed as well, *e.g.*

mho-at-ho=this very man.
khwo-chama=in that house.

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These pronouns are also suffixed to the noun without being prefixed, in which case the case termination follows the pronoun not the noun, *e.g.*

'I will beat the dog'=**keihoto** (or **ho-keito**) **ngămlam.**

Plural

these=**hàbu**
those=**kàbu**

When used absolutely, **shoung** (*i.e.*, 'several,' 'group,' etc.) may be attached to **hàbu** and **kàbu**; when these are prefixed to a noun, **ho, khwo** may be suffixed to the noun, *e.g.*

"Which dogs?" "These"= **laubo kei? hàbu shoung.**
Those birds=**kàbu ao** or **kàbu ao-kàhwo.**

Interrogative Pronouns.

Who=**au.**
Which=**lau, laubo.**
What=**ai.**

Indefinite Pronouns.

Some one=**auji.**
Something=**aiji.**
Something or other=**ajamjam.**

Correlatives.

How much?=**lāting, lāluji.**		so much=**hajuji, kajuji.**
How?=**lai**		so=**hai, kai**
Of what sort=**laibu**		of this sort=**haibu**
		of that sort=**kaibu.**
Why?=**aila**	for this reason=**hola**	for that reason=**khwola**
Where?=**lato**	here=**hato**	there=**kato**
launi	**hani**	**kani**
Whereabouts?=**laini**		
On which side?=**lān**	over here=**leini**	over there=**teini**
When?=**latong**	now=**tou**	then=**kejini.**

Reflexive Pronouns.

Self=**mătpăm** (lit.=man alone)
I myself=**kămătpăm** Plu. **sănmatpam, kănmatpam**
thyself=**kāmătpăm** **kānmătpăm**
himself=**haumătpăm** **hauanmătpăm**

N.B.—**lulu**,='of own accord,' used as an enclitic may sometimes serve as a reflexive.

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Relative Pronouns.

Like other Naga languages Chang avoids relative pronouns as far as possible. Where they are indispensable the interrogative form is used, followed ordinarily by the subjunctive form of the verb. Otherwise the verbal adjective is used to express the negative. *e.g.*

'The man who came'=**lōbu măt** (**lobu** being the adjectival form of **lō**=to come).

'The man to whom I spoke has gone=**nge auto laukaji, khwo hauke** [lit. I whom spoke (subj.), he has gone].

The woman who lives in that house is dead=
khwo-chama kibu yaksa, khwo baya.
(lit. that-house-in remainer woman, she is dead)

Choose which you like=**lau maike, langashi.**
(which is good, take).

VERB.

The Chang verb is found only in the Active Voice.[1] But as regards mood it has besides the indicative and imperative moods, a definite Subjunctive form used in dependent clauses, and also Continuative, Causative, Desiderative and Inceptive compounds. In tense the Chang verb is prolific, there being sometimes several forms expressive of the same tense, and while sometimes all are used sometimes certain tense termination are not used with particular verbs, usually, it seems, to avoid confusion with some other word. Such conventions in use may vary from village and in any case defy tabulation and are only to be learnt by practice.

Each tense of the verb has also a negative or prohibitive form usually formed from the positive on a recognized and more or less consistent principle, but in the case of verbs beginning with a vowel or with an aspirate both the negative prefix (**a-**) and the main vowel of the root form are generally changed, and this change does not seem based on any very clear principle, though the prefix is usually **ü** or **i** instead of **ă**. (In the vocabulary at the end the irregular negative forms are given with the positive forms; regular forms being omitted.)

In conjugating any verbs the changes to which certain consonants are liable when preceded or followed by certain other should be borne in mind as they account for what are, at first sight, apparent irregularities.

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[1] Some forms have a Quasi-passive use, e.g. **angako loake**='uncalled he came,' but the participle here should probably be really regarded as an absolute use of the Active and="no (one) having called." The verbal adjective, however, seems often to approach a genuine Passive.

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The Imperative, besides the usual form, has in many verbs a reflexive form used only, and always, when the speaker himself is to be the object of the action ordered. In the case also of certain familiar verbs there is what may be called an Imperative of Propinquity taken from quite a different root, used only in that particular form and employed when the speaker is giving a curt order or direction which relates to the immediate presence of the speaker only. Such imperatives are found for the orders "Go!" "Come (here)!" "Give (it to me!)" and similar familiar commands. It may perhaps be surmised that these forms are survivals of some other language which has otherwise disappeared or been absorbed in the prevailing language of the tribe.

The following are moods, tenses and forms of the Chang verb in so far as they can be classified. Then terms should not, of course, be construed in the precise sense which they might bear in the case of a classical language.

1. The Infinitive.

2. Imperative
   - **Imperative Direct** (with its negative form the Prohibitive).
   - **Imperative Reflexive** where the action order reflects back on the speaker.
   - **Permissive.**

3. Indicative
   - **Present.**
   - **Preterite** expressing an action completed in past time, *e.g.* English "did."
   - **Perfect** expressing an action performed in the past, the results of which continue into the present, *e.g.*, English "has done."
   - *N.B.*—In verbs denoting the existence of a quality the force of this tense is little more than that of a simple present. Such verbs are usually more or less defective and are little used in other tenses—*e.g.* **maikē** (perfect form)="is good."
   - **Future.**
   - **Potential** expressing ability (or inability) to perform an action.

4. Participial
   - **Present** indicating the state during which an action takes place.
   - **Past** indicating the completion of an action on which further action follows.
   - **Adjectival** denoting the condition of doing or of being done.
   - **Gerund** denoting finality or purpose.[1]
   - **Gerundive** denoting fitness for action.

[1] It is simply the verbal root with the postposition **-la** suffixed.

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5. SUBJUNCTIVE—a form used to modify the indicative tenses in dependant clauses.
6. CONTINUATIVE—a form used to express emphatic continuation of the action.
7. CAUSATIVE—a form used to turn intransitive verbs into transitive and to express generally causation, or even mere permission.
8 DESIDERATIVE—expressing the wish to act.
9. INCEPTIVE—expressing the beginning of action.

The following are the mood tense and form inflexions of the Chang verb :—

		Positive	Negative
IMPERATIVE	Direct		
		-ashi (or 'shi)	ta-
		-ash	
	Reflexive		
		-pu	ta- -pu
		-ke	ta-
	Permissive		
		na- -a	ta- -ti
INDICATIVE	Present		
		-ta	a- -ta
	Preterite		
		-a	a-
	Perfect		
		-kē	a- -kē
		-akē	
	Future		
		-labu (or -lab')	a- -labu (or lab')
		-lam	a- -lam
		-ko	ta- -ko
	Potential		
		-anlam	a- -anlam
		-anlabu	a- -anlabu
PARTICIPIAL	Present		
		-jini	a- -jini
		-toä	a- -toä
	Past		
		an, -anyu	a- -ko
		chung	

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	Gerund	
	-la	
	Gerundive	
	-chan	a- -chan
	Adjectival	
	-bu	a- -bu
SUBJUNCTIVE	-ji	a- -ji
	-si	a- -si
	-siji	a- -siji
	-logoji	a- -logoji

N.B.—**ji** alone implies mere subjugation of the clause, **-si** is used where a condition is expressed (*vide* examples below).

The alternative form for the Future in **-ko** and **ta....ko** has reference to the mental attitude of the subject of the verb as distinct from the attitude imposed by conditions or circumstances, to which the termination **-labu** has reference. This difference is not dissimilar to that between the English 'will' and 'shall' in their original and (?) correct uses, the one indicating volition and the other compulsion. Thus a man saying **takuto** implies that he does not wish to give, and would not do so even if able. If he says **akulabu** he implies that he does not mean to give, as circumstances prohibit it, but would willingly do so if he could. Conversely, if a friend offers him a drink and he replies **teyungko,** no offence is taken as he means that he does not feel like drinking, and that if he was thirsty he would accept the offer, whereas if he replied **ayunglabu,** 'I shall not drink', he would give offence, the implication being that he was refusing friendly intercourse gratuitously or through malice.

CONTINUATIVE

-ŭng
-ai-

N.B.—The root form with **-ŭng** is followed by a repetition of the verb in whatever tense is applicable to the situation. *e.g.* **kăm**='do'—**kămŭng kămta** = 'continues to do;' **shau**= 'eat' > **shauŭng shauke**= 'continued eating.'

-ai- is an infix used as **-ti-** is below, but seems only to be occasionally employed.

CAUSATIVE

-ti- a- **-ti-**

N.B.— **-ti-** is infixed immediately after the root and before the inflexion. In the imperative the **i** is usually dropped, *e.g.* **shauashi**= 'eat' **shau-t'ashi** (not **shauti'ashi**)='feed.' This

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infix is also sometimes used with a purely continuative sense, as well as being frequently merely permissive.

DESIDERATIVE

-māng sügh- -māng asügh-

N.B.—**māng** is suffixed to the root and this compound followed by the root **sügh-** conjugated in the ordinary way, the use of the nominative or agentive case of the subject being determined by the verb signifying the action desired and not by the verb **sügh-** signifying the desire; thus while "I wish to go" (hau)=**ngo haumāng sügh**ta, "I wish to do" (kăm)=**ngei kămmāng sügh**ta.

INCEPTIVE

-la nyăng -la anyăng

N.B.—The gerund of the verb is followed by **nyăng** conjugated on the ordinary way.

REPRESENTATIVE VERBS.

The following common verbs are conjugated by way of illustrating the Chang verb, which though regular on the whole is capricious at times, indulging in vagaries on no very fixed plan, many verbs being defective in parts and having other unreasonable idiosyncracies. The verbs given are fairly representative.

They are :—

A. verbs with stems beginning with a consonant and ending with a simple vowel.
N.B.—When this vowel is -a, the initial a of the inflection is not repeated

ki-	be
phe-	ask
ku-	give
lē-	take
lō-	come
shi-	hunt
ngā-	call
songba-	bring

B. ditto, ending with a diphthong,

chongei-	answer
lau-	speak

C. ditto, ending with a consonant
N.B.—The final consonant of the stem or the initial consonant of the inflection is often altered (*v.* page 9) under the influence of the consonant following or preceding it as the case may be.

lĕn-	tell
yung-	drink
sāt-	run away
kok-	steal
cheg-	buy
chüg-	look at
kăm-	do
ngăm-	strike
yeb-	lie down
lāksăb-	rise up

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D. verbs with stems beginning with a vowel or H.
N.B.—Here there is a vowel change in the negative form, a becomes ü, ai becomes ei, au becomes o.

ang-	go up
in-	give to drink
ŏknin-	feed, entertain
hăp-	get
hai-	die
hau-	go

Ki=be, stay.

Positive.		Negative.		
ki	to be, stay	aki	not to be, not to stay.	Infin.
kiashi, kiash ki' shi	be, stay	taki	be not, stay not	Imp. Direct.
kipu		yakipu		,, Reflex.
nakia	let be, stay	takiti	let not be, stay	,, Permissive
kita	is staying	akita	is not staying	Indic. Present
kia	is	aki	is not	,, Pret.
kikē	stayed	akikē	did not stay	,, Perfect
kilabu, kilab' kilam kiko	will be, stay	akilabu etc. takiko	will not be, stay	,, Future
kianlabu kianlam	can be, stay	akianlabu etc.	cannot be, stay.	,, Potential
kijini kitoä	while being, staying	akijini akitoä	while not being, not staying.	Participle Present
kian, kianyu	having been, stayed	akiko	not having been, stayed.	,, Past
kila	for staying			,, Gerund
....		....		,, Gerundive
kibu	was	akibu	was not.	Adjectival.

The verb ying is often used where in English we use the verb 'to be': Its full sense is 'to be right' 'correct' thus aying='no,' 'not so.'

The aorist kia is the ordinary word for "is" and is used ordinarily for present time though it may also be used in speaking of the past as we use the historic present in English or in French. There is no perfect tense in the sense of 'has been.' The adjectival kibu is always used for 'was' though it also has its adjectival meaning of 'one who is' or 'stays,' with particular reference to one who stays in the house instead of going about to work or hunt, etc.

The form kichan is not used; "meet to be" or "meet to stay" is expressed by saying kila chankē, *i.e.* "is suitable for being" < the verb chan='befit,' (negative–kila achankē).

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Phe=ask. VERB.

Positive.		Negative.		
phe	to ask	aphe	not to ask	INFINITIVE.
pheashi, pheash	ask	taphe	ask not	Direct IMP.
pheke	ask (me)	taphe	ask (me) not	Reflex. ,,
naphea	let—ask	tapheti	let—not ask	Permissive
pheta	is asking	apheta	is not asking	Present INDI.
phea	asked	aphe	did not ask	Pret. ,,
pheakē, phekē	has asked	aphekē	has not asked	Perfect ,,
phelabu, phelab', phelam, pheko	will ask	aphelabu etc. tapheko	will not ask	Future ,,
pheanlabu, pheanlan	can ask	apheanlabu etc.	cannot ask	Potential ,,
phejini, phetoä	while asking	aphejini, aphetoä	while not asking	PARTICIPLE Present
phean[1], phechung	having asked	apheko	not having asked	,, Past
phela	for asking			,, Gerund
phechan	meet to ask, be asked	aphechan	not meet to ask be asked	,, Gerundive
phebu	which is asked or asks	aphebu	one who does not ask or is not asked	Adjectival

Ku=Give. VERB.

Positive		Negative	
ku	to give	aku	INFINITIVE
kuashi, etc.	give	toku	Direct IMPERATIVE
lapu[2]		talapu	Reflex. ,,
nakua	let—give	tokuti[3]	Permissive ,,
kuta	is giving	akuta	Present INDICATIVE
kua	gave	aku	Participle ,,
kuakē, etc.	has given	akuke	Perfect ,,

---

[1] also **pheanyu.** This form may be taken as in use in all verbs whenever the form in **-an** simply is in use.

[2] Reflexive Imperative—**lapu**, from a different root, as often. Negative—**talapu.**

[3] **tokuti** also="don't send," imperative direct (Negative) from **kuti-**='send' (causative of **ku**).

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Positive		Negative	
kulabu, etc. **kuko**	will give	**akulabu**, etc. **takuko**	Future INDICATIVE
kuanlabu, etc.	can give	**akuanlabu**, etc.	Potential ,,
kujini **kutoä**	in giving, while giving	**akujini** **akutoä**	Present PARTICIPLE
kuan **kuchung**	having given	**akuko**	Past ,,
kula	for giving		Gerund ,,
kuchan	meet to give (or be given)	**akuchan**	Gerundive ,,
kubu	which is given or gives	**akubu**	Adjectival ,,

Lē=Take.[1] VERB.

Positive		Negative	
le	to take	**ale**	INFINITIVE
leashi, etc.	take	**tale**	Direct IMPERATIVE
....		....	Reflexive ,,
nalea	let take	**taleti**	Permissive ,,
leta	is taking	**aleta**	Present INDICATIVE
lea	took	**ale**	Preterite ,,
leakē, etc.	has taken	**alekē**	Perfect ,,
lelabu, etc. **leko**	will take	**alelabu**, etc. **taleko**	Future ,,
leanlabu, etc.	can take	**aleanlabu**, etc.	Potential ,,
lejini **aletoä** .... [2]	while taking	**alejini**, **alctoä**	Present PARTICIPLES
		aleko=not having taken	Past ,,
lela	for taking		Gerund ,,
lechan	meet to take (or be taken)	**alechan**	Gerundive ,,
lebu	one who (or which) is taken or takes	**alebu**	Adjectival ,,

---

[1] 'take away'=**lang**.

[2] **lean** and **lechung** only exist as parts of the verb **le**='to wear' and would only be understood in that sense. The past participle 'having taken' must be rendered by **langan, chungan or chungchung** from **lang**='take away' and **chung**='take hold.'

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lō=Come. VERB.

Positive		Negative	
lo	to come	alo	INFINITIVE
ka, kai[1]	come	tikai	Direct IMPERATIVE
naloa	let come	taloti	Permissive ,,
lota	is coming	alota	Present INDICATIVE
loa	came	alo	Preterite ,,
loakē, etc.	has come	alokē	Perfect ,,
loanlabu, etc. / loko	will come	alolabu, etc. / taloko	Future ,,
loanlabu, etc.	can come	aloanlabu, etc.	Potential ,,
lojini, etc.	while coming	alojini, etc.	Present PARTICIPLES
loän .... [2]	having come	aloko	Past ,,
lola	for coming		Gerund ,,
lochan	meet to come	alochan	Gerundive ,,
lobu	comer, one who comes, or came.	alobu	Adjectival ,,

Shī=hunt, drive. VERB.

Positive		Negative	
shi	to hunt	ashi	INFINITIVE
shiyashi, etc.	hunt	tashi	Direct ,,
(shian chimbu)		tashi	Reflexive ,,
nashia	let hunt	tashiti	Permissive ,,
shita	is hunting	ashita	Present INDICATIVE
shia	hunted	ashi	Preterite ,,
shiake, etc.	has hunted	ashike	Perfect ,,
shilabu, etc. / shiko	will hunt	ashilabu, etc. / tashiko	Future ,,
shianlabu etc.	can hunt	ashianlabu, etc.	Potential ,,
shijini, etc.	while hunting	ashijini etc.	Present PARTICIPLES
shian / shichung	having hunted	ashiko	Past ,,
shila	for hunting		Gerund ,,

[1] Imperative of Propinquity from different root, used only with immediate reference to speaker, and only in immediate present both of time and place.

[2] **lochung** not in ordinary use.

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Positive		Negative	
shichan	meet to hunt (or be hunted)	ashichan	Gerundive Participles
shibu	one who hunts (or is hunted)	ashibu.	Adjectival ,,

ngā=to call. Verb.

Positive		Negative	
nga	to call	anga	Infinitive
ngashi, etc.	call	tanga	Direct Imperative
ngake	call (me)	tanga	Reflexive ,,
nanga	let call	tangati	Permissive ,,
ngata	is calling	angata	Present Indicative
nga	called	anga	Preterite ,,
ngakē	has called	angakē	Perfect ,,
ngalabu, etc. / ngako	will call	anganlabu, etc. / tangako	Future ,,
nganlabu, etc.	can call	anganlabu	Potential ,,
ngajini	while calling	angajini	Present Participles
ngan / ngachung	having called	angako	Past ,,
ngala	for calling		Gerund ,,
ngachan	meet to call (or be called)	angachan	Gerundive ,,
ngabu	one who is called or calls	angabu.	Adjectival ,,

Songba=bring. Verb.

Positive		Negative	
songba	to bring	asongba	Infinitive
songba' / songbashi	bring	tasongba	Direct ,,
nasongba	let bring	tasongbati	Permissive ,,
songbata	is bringing	asongbata	Present Indicative
....		asongba did not bring	Preterite ,,
songbake	brought has brought	asongbake has not brought	Perfect ,,
songbalabu, etc. / songbako	will bring	asongbalabu, etc. / asongbako	Future ,,
songbanlabu etc.	can bring	asongbanlabu, etc.	Potential ,,

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Positive		Negative	
songbajini etc.	while bringing	asongbajini etc.	Present PARTICIPLES
songban	having brought	asongbako	Past ,,
songbala	for bringing	....	Gerund ,,
sonbachan	meet to bring (or be brought)	asongbachan	Gerundive ,,
songbabu	who is brought (or brings)	asongbabu.	Adjectival ,,

Chongei=answer. VERB.

Positive	Negative	
chongei	achongei	INFINITIVE
chongeiashi, chongeishi	tachonei	Direct IMPERATIVE
chongeike, chongeipuh	tachongei	Reflexive ,,
nachongeia	tachongeiti	Permissive ,,
chongeita	achongeita	Present INDICATIVE
chongeia	achonge	Preterite ,,
chongeyake, etc.	achongeike	Perfect ,,
chongeilabu, etc. chongeiko	achongeilabu, etc. tachongeiko	Future ,,
chongeyanlabu, etc.	achongeyanlabu, etc.	Potential ,,
chongeijini, etc.	achongeijini, etc.	Present PARTICIPLES
chongeian	achongeiko	Past ,,
chongeila		Gerund ,,
chongeichan	achongeichan	Gerundive ,,
chongeibu	achongeibu	Adjectival ,,

chongei is also commonly found in the causative form **chongeiti**—with the same sense as the simple form, so that whereas **haula tachongeiti**='let him not answer,' **tachongeiti** simply='don't answer.'

lau=Say, speak. VERB.

Positive	Negative	
lau	**alau**	INFINITIVE
lauashi, la'ashi, etc.	**talau**	Direct IMPERATIVE
.....		Reflexive ,,
nalaua	**talauti**	Permissive ,,
lauta	**alauta**	Present INDICATIVE
laua	**alau**	Preterite ,,
lauake	**alauke**	Perfect ,,

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Positive	Negative	
laulabu, etc.	alaulabu, etc.	Future INDICATIVE
lauko	talauko	
lauanlabu, etc.	alauanlabu, etc.	Potential ,,
laujini, etc.	alaujini, etc.	Present PARTICIPLES
lauan	alauko	Past ,,
lauchung		Gerund ,,
laula	alauchan	Gerundive ,,
lauchan	alaubu	Adjectival ,,
laubu		

Compare the verb len following. The reflexive imperative of that verb is in very common use.

In **shau**='eat,' the participle is contracted to **shān.**

len=tell, explain. VERB.

Positive	Negative	
len	alen	INFINITIVE
lenashi, etc.	talen	Direct IMPERATIVE
lempu	talempu	Reflexive ,,
nalena	....	Permissive ,,
lenta	alenta	Present INDICATIVE
lena	alen	Preterite ,,
lenake, etc.	alenke, etc.	Perfect ,,
lenlabu, etc.	alenlabu, etc.	Future ,,
lenko	talenko	
lenanlabu, etc.	alenanlabu, etc.	Potential ,,
lenjini, etc.	alenjini, etc.	Present PARTICIPLES
lenan	alenko	Past ,,
lenchung		
lenla		Gerund ,,
lenchan	alenchan	Gerundive ,,
....	....	Adjectival ,,

No adjectival form in use. See verb **lau**='speak,' 'say' on previous page. These two verbs sometimes supplement one another in defective parts.

talenti seems only to be used as direct prohibitive of causative from **lenti**='cause to tell,' 'report.'

Yung=drink. VERB.

Positive	Negative	
yung	ayung	INFINITIVE
yungashi, etc.	teyung	Direct IMPERATIVE
nayunga	teyungti	Permissive ,,
yungta	ayungta	Present INDICATIVE
yunga	ayung	Preterite ,,

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Positive	Negative	
yungake, etc.	ayungke	Perfect INDICATIVE
yunglabu, etc. }	ayunglabu, etc.	Future ,,
yungko }	teyungko	
yunganlabu, etc.	ayunganlabu, etc.	Potential ,,
yungjini, etc.	ayungjini, etc.	Present PARTICIPLES
yungan }	ayungko	Past ,,
yungchung }		
yungla		Gerund ,,
yungchan	ayungchan	Gerundive ,,
yungbu	ayungbu	Adjectival ,,

See also verb in=to give to drink.

Sāt=run away. VERB.

Positive	Negative	
sāt	asat	INFINITIVE
sātashi, etc.	tasat	Direct IMPERATIVE
....	....	Reflexive ,,
nasāta	tasatti	Permissive ,,
sātta	asaṭṭa	Present INDICATIVE
sāta	asat	Preterite ,,
sātake, etc.	asatke or asakke	Perfect ,,
sātlabu, etc. }	asatlabu, etc.	Future ,,
sātko }	tasatko or tasakko	
sātanlabu, etc.	asatanlabu, etc.	Potential ,,
sātjini, etc.	asatjini, etc.	Present PARTICIPLES
sātan	asatko or asakko	Past ,,
sātla		Gerund ,,
sātchan	asatchan	Gerundive ,,
sātbu	asatbu	Adjectival ,,

'run', simply.=lāng

sāt='sit down' is conjugated like sāt, but has the form sātchung as well as sātan. The perfect sātake='has sat down' *i.e.* "is sitting."

Kok=steal. VERB.

Positive	Negative	
kok	akok	INFINITIVE
kokashi, etc.	takok	Direct IMPERATIVE
kokpu	takokpu	Reflexive ,,
nakoka	takokti	Permissive ,,
kokta	akokta	Present INDICATIVE
koka	akok	Preterite ,,
kokake, etc.	akokke	Perfect ,,

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Positive	Negative	
koklabu, etc. }	akoklabu, etc.	Future INDICATIVE
kokko }	takokko	
kokanlabu, etc.	akokanlabu	Potential ,,
kokjini, etc.	akokjini, etc.	Present PARTICIPLES
kokan }	akokko	Past ,,
kokchung }		Gerund ,,
kokla	akokchan	Gerundive ,,
kokchan	akokpu	Adjectival ,,
kokpu		

N.B.—Yak- = "sell" is precisely similar.

Cheg-=buy. VERB.

Positive	Negative		
cheg	acheg		INFINITIVE
chegashi, etc.	tacheg	Direct	IMPERATIVE
chegpu *	tachegpu	Reflexive	,,
nachega	tachegti	Permissive	,,
chegta	achegta	Present	INDICATIVE
chega	acheg	Preterite	,,
chegake, etc.	achegke	Perfect	,,
cheglabu, etc. }	acheglabu, etc.	Future	,,
chegko }	tachegko		
cheganlabu, etc.	acheganlabu	Potential	,,
chegjini	achegjini	Present	PARTICIPLES.
chegan }	achegko	Past	,,
chegchung }			
chegla		Gerund	,,
chekchan	achekchan	Gerundive	,,
chegbu	achegbu	Adjectival	,,

* *N.B.*—**chüg-** —look at, examine, is similar, except in that it makes the Imperative Reflexive **chügke**, negative **tachüg**.

kăm-=do. VERB.

Positive	Negative		
kăm	akăm		INFINITIVE
kămashi, etc.	takăm	Direct	IMPERATIVE
(kampu)*		Reflexive	,,
nakăma	takămti	Permissive	,,
kămta	akămta	Present	INDICATIVE
kăma	akăm	Preterite	,,
kămake, kămpe	akămpe	Perfect	,,
kămlabu, etc. }	akămlabu, etc.	Future	,,
kămpo }	tăkămpo		
kămanlabu, etc.	akămanlabu, etc.	Potential	,,

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Positive	Negative		
kămjini	akămjini	Present	PARTICIPLES
kăman, kămchung	akămpo	Past	,,
kămla		Gerund	,,
kămchan	akămchan	Gerundive	,,
kămbu	akămbu	Adjectival	,,

* in *sens. obsc.* only.

ngăm- = 'strike' is precisely similar, except that it has for its Imperative Reflexive **ngampe**, negative **tangam**.

All verbs with roots ending in **m** undergo the same changes from k to p in their inflections as **kăm-** and **ngam-**.

Yeb-=lie down, sleep. VERB.

Positive	Negative		
yeb	ayeb		INFINITIVE
yebashi, etc.	tayeb	Direct	IMPERATIVE
nayeba	tayepti	Permissive	,,
yepta	ayepta	Present	INDICATIVE
yeba	ayeb	Preterite	,,
yebake, yeppe	ayeppe	Perfect	,,
yeblabu, etc., yeppo	ayeblabu, etc., tayeppo	Future	,,
yebanlabu, etc.	ayebanlabu, etc.	Potential	,,
yepjini, etc.	ayepjini, etc.	Present	PARTICIPLES
yeban, yebchung	ayeppo	Past	,,
yebla		Gerund	,,
yebchan	ayebchan	Gerundive	,,
yebbu	ayebbu	Adjectival	,,

N.B.—Other verbs with stems ending in **b** undergo the same consonantal changes as **yeb-**; verbs with stems ending in **p** are also similar.

Lāksăb-=rise. VERB.

Positive	Negative		
lāksăb	**alaksab**		INFINITIVE
lāksăbashi, etc.	**talaksab**	Direct	IMPERATIVE
nalaksaba	**talaksapti**	Permissive	,,
laksapta	**alaksabta**	Present	INDICATIVE
laksaba	**alaksab**	Preterite	,,
laksabake, laksappe	**alaksappe**	Perfect	,,
laksablabu, etc., **laksappo**	**alaksalabu**, etc., **talaksappo**	Future	,,
laksabanlabu, etc.	**alaksabanlabu**, etc.	Potential	,,

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laksabjini } laksaptoä }	alaksabjini alaksaptoä	Present	PARTICIPLES ,,
laksaban } laksabchung }	alaksappo	Past	,,
		Gerund	,,
laksabla		Gerundive	,,
laksabchan	alaksabchan	Adjectival	,,
laksabbu	alaksabbu		

N.B.—Other verbs with roots ending in **b** are conjugated like **lāksăb-**.

lāksăb- = to rise from a recumbent posture. To rise from a sitting posture is **lu-**.

Ang-=go up. VERB.

Positive	Negative		
	ü'ang		INFINITIVE
ang	teang	Direct	IMPERATIVE
angashi, etc.	teangti	Permissive	,,
nanga	ü'angta	Present	INDICATIVE
angta	ü'ang	Preterite	,,
anga	ü'angke	Perfect	,,
angake, etc.	ü'anglabu, etc.	Future	,,
anglabu, etc. } angko }	teangko		
anganlabu, etc.	ü'anganlabu, etc.	Potential	,,
angjini, etc.	ü'angjini, etc.	Present	PARTICIPLES
angan	ü'angko	Past	,,
angla		Gerund	,,
angchan	ü'angchan	Gerundive	,,
angbu	ü'angbu	Adjectival	,,

N.B.—Similar are other verbs with roots beginning with a-

in=give to drink. VERB.

Positive	Negative		
			INFINITIVE
in	iïn		
inashi, etc.	teïn	Direct	IMPERATIVE
impu	teïmpuh	Reflexive	,,
naïna	teïnti	Permissive	,,
inta	iïnta	Present	INDICATIVE
ina	iïn	Preterite	,,
inake, etc.	iïnke	Perfect	,,
inlabu, etc. } inko }	iïnalabu, etc. teïnko	Future	,,
inanlabuh, etc.	iïnanlabu, etc.	Potential	,,
injini	iïnjini	Present	PARTICIPLES
inan	iïnko	Past	,,
inla		Gerund	,,
inchan	iïnchan	Gerundive	,,
imbu	iïmbu	Adjectival	,,

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N.B.—When used with the noun **i** (='liquor') as its object, much confusion is liable to arise between **i in**="to give liquor to drink" and **iin**="not to give to drink."

Ŏknīn=feed, entertain. VERB.

Positive	Negative		
ŏknīn	**ōknin**		INFINITIVE
ŏkninashi	**tōknin**	Direct	IMPERATIVE
nŏknina	**tōkninti**	Permissive	,,
ŏkninta	**ōkninta**	Present	INDICATIVE
ŏknina	**ōknin**	Preterite	,,
ŏkninake	**ōkninke**	Perfect	,,
ŏkninlabn / **ŏkninko**	**ōkninlabu** / **tōkninko**	Future	,,
ŏkninanlabu	**ōkninanlabu**	Potential	,,
ŏkninjini	**ōkninjini**	Present	PARTICIPLES
ŏkninan	**ōkninko**	Past	,,
ŏkninla		Gerund	,,
ŏkninchan	**ōkninchan**	Gerundive	,,
ŏkninbu	**ōkninbu**	Adjectival	,,

N.B.—The difference between the negative and positive is comparatively clear in this case, but in some verbs beginning with o the two are almost indistinguishable to any one but a Chang himself, as in the verb **oyu-** ='quarrel.' The positive and negative may be distinguished in writing by long and short marks, **ŏyu-** and **ōyu-**, but in pronunciation I have found the difference almost incapable of discrimination.

Hăp- =get, meet, see. VERB.

Positive	Negative		
hăp	**ühüp** or **ĭhĭp**		INFINITIVE
hăpashi, etc.	**tühüp** or **tĭhĭp**	Direct	IMPERATIVE
nahăpa	**tühüpti** or **tĭhĭpti**	Permissive	,,
hăpta	**ühüpta**, etc.	Present	INDICATIVE
hăpa	**ühüp**	Preterite	,,
hăpake, hăppe	**ühüppe**	Perfect	,,
hăplabu, etc. / **hăppo**	**ühüplabu**, etc. / **tühüppo**	Future	,,
hăpanlabu, etc.	**ühüpanlabu**, etc.	Potential	,,
hăpjini, etc.	**ühüpjini**, etc.	Present	PARTICIPLES
hăpan / **hăpchung**	**ühüppo**	Past	,,
hăpla		Gerund	,,
hăpchan	**ühüpchan**	Gerundive	,,
hăppu	**ühüppu**	Adjectival	,,

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N.B.—Apart from the consonantal changes consequent on the stems ending in **p**, other verbs beginning with **ha-** form their negative similarly.

hai- =die. VERB.

Positive	Negative		
hai	**ühei** or **ihei**		INFINITIVE
haiashi, etc.	**tühei, tihei**	Direct	IMPERATIVE
nahaia	**tüheiti**, etc.[1]	Permissive	,,
haita	**üheita**	Present	INDICATIVE
haia	**ühei**	Preterite	,,
haiake, etc.	**üheike**	Perfect	,,
hailabu, etc. }	**üheilabu**, etc.	Future	,,
haiko }	**tüheiko**		
hayanlabu, etc.	**üheianlabu**, etc.	Potential	,,
haijini, etc.	**üheijini**, etc.	Present	PARTICIPLES
haian	**üheiko**	Past	,,
haila		Gerund	,,
haichan	**üheichan**	Gerundive	,,
haibu	**üheibu**	Adjectival	,,

hau=go. VERB.

Positive	Negative		
hau	**ohō**		INFINITIVE
havashi, etc.	**tohō**	Direct	IMPERATIVE
(ko[2]**)**		Reflexive	,,
nahaua	**tohōti**	Permissive	,,
hauta	**ohōta**	Present	INDICATIVE
haua	**ohō**	Preterite	,,
hauake, etc.	**ohōke**	Perfect	,,
haulabu, etc. }	**ohōlabu**, etc.	Future	,,
hauko }	**tohōko**		
hauanlabu, etc.	**ohoänlabu**, etc.	Potential	,,
haujini, etc.	**ohōjini**, etc.	Present	PARTICIPLES
hauan	**ohōko**	Past	,,
haula		Gerund	,,
hauchan	**ohōchan**	Gerundive	,,
haubu	**ohobu**	Adjectival	,,

N.B.—**hau**='to hit' (a mark) and **hau**='to gather up' both make their negative **uhau.**

---

[1] The alternative negative root in **ïhei** gives formations for each tense just like the form **ühei.**

[2] **ko** from another root="go!," "get out"!" and is used with reference to immediate departure from the immediate presence of the speaker, under which circumstances **hauashi** would not be used.

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hau—go *high tone.*
hau—hit *low tone.*
hau—gather *medium tone.*

EXAMPLES OF THE USE OF VERBS.

IMPERATIVE.

Come here! = **ka!**
Come tomorrow = **nyet kai.**
Give him two rupees = **haula nām pan-ni kuashi.**
Give me rohi=**kăla nyăgi-tei lapu.**
Ask Ngaku = **Ngakuka pheashi.**
Ask me = **kăto pheke.**
Call Yanchu = **Yanchu** (or **Yanchu-to**) **ngāshi.**
Call me = **kăto** (or **ngo**) **ngāke.**
Don't give me modhu to drink, give it to Ngaku = **Kăla i teïmpu, Ngaku-la inashi.**
Let him die = **hau nahaia.**
Don't let him go = **hau tohoti.**

INDICATIVE PRESENT.

The coolies are telling Yanchu that 4 annas is not right = **ung-kan-ik Yanchuto lauta chipe** (or '**iki**') **tiktie ayingke.**

N.B.—Here **lauta** may with equal correctness be placed last after **ayingke.**

Ayingke is the perfect form, negative, of **ying-** = 'be right,' 'correct,' as in the case of verbs expressing a quality it has a merely present sense, *e.g.*, **maike**="is good," **chanke** ="is fit."

PRETERITE.

I asked the sahib for money; he said there was none = **nge shahibka nām hia; haue aki lauke.**

N.B.—Here the third verb would normally be put in the perfect as its statement is regarded as still holding good at the moment of speaking. The second verb is in the preterite form, but the sense is present (v. conjugation of **ki-**) as the speaker's actual words are retained.

The sahib gave me money, but it was not enough, therefore I stole=**Shahibe kăla nām kua, lan apan, khwo-shanga kŏka.**

PERFECT.

The sahib has given me money, but it is not enough. Therefore I have stolen=**Shahibe kăla nām kuake, lan apanke, khwo-shanga kokke.**

N.B.—Here the inference from **kuake** is that the money has quite recently been given to the speaker and is still in his

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possession, **apanke** is the perfect form with present sense found in verbs implying the existence of a quality, **kokke**, like **kuake**, suggests the continuance of the effect of the action up to the time of speaking.

Menya has told a lie =**Menya āmlăng lauke** (or **yepeke**).

Sibung has beaten Menya's dog=**Sibung-e Menyabu keito ngampe.**

The work is very difficult=**Kămsilei aibu siekke.**

N.B.—This is another instance of the perfect with present sense found in verbs which imply the existence of a quality and not the performance of an action.

FUTURE.

I will not strike you=**nge kāto tangampo.**

I shall kill you=**nge no haitilabu** (or **haitilam**).

N.B.—The object is put in the nominative form with **haiti-**, which is the causative form of the intransitive **hai-**. It may also be put in the accusative in other cases, but a Chang would not say **kāto haitilam.**

It is said that he will die = **hau hailabu-tügh**, or **hailap-tügh** not **hailam-tügh.**[1]

POTENTIAL.

"Can you show me the road or not?" "I can show it." ="**kăla lam lenan-asao?**" "**Lenan-lam.**"

One can buy two fowls for a rupee=**Nām chie aunok pan-ni cheganlam.**

PARTICIPLE PRESENT.

"While I am speaking remain quiet"=**nge ngügh laujini, sammeli ki'shi.**

While walking on the path, I met a tiger=**ngo lama paijini, saunyu happe.**

(*N.B.*—The subject takes the nominative or agentive form as the case may be as though the participle were a finite tense.)

PAST.

After seeing the tiger, I came back=**Saonyu hăpan longaike.**

When I have eaten rice, I will come=**Nyăk shā'n, loko.**

He went away without eating=**Ashauko hauke.**

I don't know your name, but I recognize your face=**Kānyen anyeko, pā kābu tesinyek shenake.**

After drinking he died=**Yungchung haia.**

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[1] *N.B.*—The enclitic **-tügh**, (like **-she** in Angami), means 'it is said,' and is used as an enclitic to the actual words reported.

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GERUND.

I have come to buy salt=**Chăm chekla loke.**

GERUNDIVE.

Your salt (is) not fit to eat=**Kābuh chăm ashauchan.**
You are not fit to eat salt=**Nô chăm ashauchan.**
This tiger is meet to be hunted=**Saunyu khwo shichan kia.**
You ought to hunt this tiger=**Nô saunyu khwo shichan kia.**

ADJECTIVAL.

The money asked for by him I gave=**Haue hibu nām, nge kua.**

(*N.B.*—The agentive case is used with this form of the verb.)

The man who asked, I drove away=**Hibu măt, nge shian sāttia.**
The dead become ghosts=**Măt haibu-shoung soula yeia.**

(*N.B.*—Here the adjectival form is used with the collective suffix **-shoung** and follows the noun qualified instead of preceding it as above. The verb **yei**,='become,' takes the dative case, hence **sou-la** for "ghosts" where one might expect **sou.**)

SUBJUNCTIVE.

(Subjunctive particle **-ji**, conditional particle **-si.**)
If / When } Mongko steals the mithun, I shall beat him=

Mongko-e ngōu { **kokalogoji, nge hauto ngămlam** / **koksi** / **koksiji**

(*N.B.*—Here the tense of the protasis is really future, but whether it is future or present any of the three forms given may be used.)

When Mongko stole the mithun, I beat him=**Mongko-e ngou kokjini, nge ngampe.**

(*N.B.*—Here **kokjini** is the present participle, referring to the time of beating, the tense of which governs the whole clause.)

I beat the man who stole the mithun=**au-e ngou kokkeji, nge khwoto ngampe.**
(lit. who stole the mithun, him I beat.)
I will beat the man who steals mithun=**Au-e ngou koklaji, nge khwoto ngamlam.**
(koklaji is for **koklamji** or **koklabuji.)**

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CONTINUATIVE.

Mongko keeps on stealing=**Mongko-e kokung kokta.**
I always kept beating him=**nge pambento hauto nga-mung ngampe.**

CAUSATIVE.

Yanchu's house has burnt=**Yanchu-bu chăm chokke.**
Yanchu has burnt his house=**Yanchu-e hauebu chăm chok-tike.**
Kill the "stinker!"=**ampakoklok hait'ashi!**
(*N.B.*—**hait'ashi** causative from **hai**="die".)

DESIDERATIVE.

Loyum-kalok wishes to kill his elder brother=**Loyum-kalok-e hau 'jeī-to hai-ti-mang sŭghake.**
(*N.B.*—Perf. tense of **-mang sŭgh-** has present sense.)
Imtichuba doesn't wish to die=**Imtichuba haimang asŭghta.**

INCEPTIVE.

Thongpang's corpse has begun to rot=**Thongpangebu măng nyaghla nyăngake.**

COMPOUND VERBS.

Compound verbs are formed in the positive by joining together two roots and conjugating them as one, the important verb standing first, in the usual agglutinative way. In the negative, however, the roots are sometimes separated by a redundant negative affix.

e.g. (1) **cheg**=buy, **ku**=give, > **chegku**=buy and give. *e.g.* **Nge Ngakula keito chegkuke**=I bought a dog and gave it to Ngaku.

Here the negative of **chegkuke** would be **achegkuke** the single prefix making both verbs negative.

(2) **phe**=ask, **le**=surround > **phele**=to importune. Here however the negative is **aphe-ale**, both verbs taking the negative prefix; so also **takam tale**=don't keep doing.

INTERROGATIVES.

(1) Questions preceded by an interrogative pronoun do not need any interrogative particle; the interrogative particle **a** may however be used at the end of the sentence *e.g.*—

Ai kămta=What are you doing?
Ngo-ho au-e kokke?=Who stole these mithun?
Koma haisi, aila yeilam a?=If Koma dies, what will happen?

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(2) Where there is no interrogative pronoun one or more of the interrogative particle **-asao, si, aie, a, lan,** is used.

Of these particles **-asao** is suffixed to the root of the verb and refers to future time, *e.g.*

Will you do it ?=**Kam-asao ?**

Si is used by itself either where no verb is expressed, or in an alternative question where it is suffixed to each of the alternations except the last *e.g.*

Are you a dog ?=**No kei si ?**
Is Koma a man or a monkey ?=**Koma măt-si kumei ?**
Will you do it or not ?=**Kamlap-si akamlam ?**
Has Koma married two wives, or three, or six or ten ?= **Koma yakni-si săm-si lak-si an ngāke ?**
Did Koma steal the mithun or buy it ? It is said that he stole it=**Koma-e ngou kokke-si chekke ? kokke tügh.**
Has Kaolum gone having done his work, or not having done it ?=**Kaolum kamsilei kaman-si akampo sātke ?**

Aie is used after **si** (the two are sometimes abbreviated into **s'aie**) in simple questions referring to past time.

Did you say that sort of thing ?=**nyi kei lauke si aie ?**
Is Kaolum a bad character ?=**Kaolum liliti yingke si aie ?**

(*N.B.*—Here the tense though present in English is perfect in the Chang idiom, *vide supra* p. 20.)

Lao may be used when expressing surprise and expecting the answer "No."

e.g. Did you truthfully say that ?=**Mai kei lau' lao ?** **(lau' for laua).**
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Luo is used in questions expecting answer 'yes.'

e.g. Shall I come ?=**Lolabu luo ?**
Are you well ?=**Maishogo kia luo ?**

ADVERBS.

1. Adverbs of time.

Three days ago=**shangăt theto**
The day before yesterday= **shangăt**
Yesterday=**miet**
Today=**thāt**
Tomorrow=**niyet**
The day after tomorrow= **chēnyet**
Quickly=**hali**
Soon=**longchi kiyan**
Suddenly=**mangmang alamlili**
Never=**latankei....a-**
Hence forward=**ho-paia, ha-paia.**
Three nights ago=**shangao theto**

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Three days hence=**hamnyet**
Four days hence=**pai-nyet**
Formerly=**shā-'ngăt, mets-hāngăt**
Now a days=**thāt-nyet**
Always=**pompento**
Again=**tôke**
Now=**tou, touji**
Then=**kajini**
When=**latang**
After=**paya**
Before=**shāngăt**
Daily=**thatkei-thatkei**
Some day / One day = **latang-chichi**
At once=**chiung**
Night before last=**shangao**
Last night=**miyo**
To-night=**thao**
Tomorrow night=**niyo**
Night after tomorrow night=**cheyo**
Three nights hence=**ham-nyo**
Four nights hence=**payo**
By day=**chalowa**
By night=**nangnak**
at evening=**chāsăm**
in the morning=**ngeyang**
at cockcrow=**aukojini**
at midday=**jaji**
at midnight=**sauto-metu-bonga.**

2. Adverbs of place.

Everywhere=**păntowa**
Somewhere=**laoniji**
Anywhere=**haghpang-teguh**
Elsewhere=**lubuto**
Whence=**lauka, lau-kaunka**
Thence=**teika, khwo-kaunka**
Hence=**haka, ha-kaunka**
Here=**hani**
There=**kani**
On this side=**hīni**
On that side=**thīni**
Near=**nyăngbua**
Far / From far = **sabu, hego**
Above=**tikeni, mügh'ēni**
Below=**pange**
Before=**tetanga**
Behind=**paini**
Around=**kaijempu**
Aside=**peichelo**
Within=**māngei**
Outside=**khwong, tăng**
Between=**chinyua.**

3. Adverbs of manner.

How=**lai**
Thus=**hai**
Slowly=**māngyāngshogo**
Truly=**mai**
Wholly=**aibo**
Mere=**chōnga**
Gently=**haugshogo**
Silently / Quietly = **săммeli**
Accidentally=**măn**
Well=**maishogo**
Badly=**amaishogo**
Attentively=**titsangko**
Equally=**chetei**
Gratis=**amlang**
Slightly=**shībongsho**
Alone= **chămpu-nyung.**

Post-positions.

Across=**-tanko**
After=**-paia**
At=**-a**
From=**-ka**
In=**-a**
Inside=**-māng**

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Because of=**-shanga**
Before=**-shāmbu**
Behind=**-paia**
Between=**-chinyu**
By=**-we, -ei**
Except=**-phoanyu**
For=**-la ; -shanga**
For (in exchange for)=**-lu**
Of=**-bu, ebu**
On=**-tak**
Through=**-shetchung**
To=**-to** ; (of persons) **-chunto**
Towards=**-aito**
Under=**-pang**
With=**-paito**
With (instrumental)=**-i**

CONJUNCTIONS.

And=**toke.**
Also=**ke** (enclitic).
But=**lan ; pa** (preceded by participle in **-an** or **-anyu,** or its negative).
Except=**phoanyu.**
Either....or=**-si** (enclitic to protasis).
Perhaps=**yinglam, yingkan, yinglabu ; -lo.**
That=**togo** (following the dependant and preceding the principle clause).

e.g. :—

You are good to look at, but for work etc. bad=**no chüghla maianyu, pa kamla leila amai.**

I don't know your name, but I recognize your face=**kānyen anyeko, pa kābu tesinyek shenake.**

He gave me money, but it was not enough=**haue kăla nām kua, lan apan.**

I said that Besang had stolen a cow=**Besang masu kokke togo nge lenke.**

INTERJECTIONS.

Assent **hāgh, hoüt, he.**
Dissent **ügh** ("no"); **chi** ("that is wrong"); **aki** or **agi** (="not," "none," "there is not.")
Approval **hau hau.**
Distress **augh'a.**
Disgust **pheh.**
To attract attention **āö.**

SYNTAX.

The pronoun precedes the noun which it qualifies as a general rule, *e.g.* **khwo masu**="that cow," but in cases of emphasis may also follow it, *e.g.* **ho-măt-ho-to ngampe**="I beat this very man."

The adjective ordinarily precedes the noun it qualifies *e.g.* **thupaibu mătli chügla amai**="the race of white men (lit.

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'white man-seed') is unpleasant to look at," but it may follow it at times, as when the noun is preceded by a pronoun or when there is more than one qualifying adjective, *e.g.*, **khwo nakübu masu maibu**="that good black cow" where **nakübu** (=black) precedes **masu** (=cow) and **maibu** follows it, while **khwo masu nakübu maibu** would be equally correct.

The numeral ordinarily follows the noun, and when there is an adjective with the noun it may follow either, *e.g.* "three dogs"=**kei săm**, "three big dogs"=**kei săm yangbu** or **kei yangbu săm**

Adverbs qualifying a whole clause usually stand in front of the clause that qualify, *e.g.* **thāt lola akilabu**="I cannot come to-day" (**thāt**); **shangat-chie ngo keibu touji shalita**="Once upon a time I was rich, now I am poor." In other cases they precede the verb which they qualify, *e.g.* **Ngaku toungdi leke**=Ngaku came quickly (**toungdi**), **Maishoko kamshi**=do it well (**maishoko**).

The usual order of the sentence is first the subject, then the object, then the verb, *e.g.* **Ngakuë kăto ngămpe**="Ngaku struck me" (**kăto**), or **nge Ngakuto ngămpe**="I struck Ngaku." When both nearer and both remoter objects are expressed the former does not as a rule take any inflection, but the order in which they are placed as regards one another is immaterial: *e.g.*

Nge Ngaku-la (or **Ngaku-to**) **masu kuke**=I gave Ngaku a cow (**masu**).

Haue Kilam-bu gau Yanchu-la kuke=He gave Kilam's land to Yanchu.

In Compound sentence the dependant clauses precede the principal clause, but a common subject of both may stand once at the beginning, *e.g.*

Alenge kăto ngămlabu togo Kaolum-e lenke=Kaolum said that Aleng would beat me.

(*N.B.*—The tense of the direct speech is retained in the indirect, Kaolum's words were **Alenge kāto ngămlabu.**)

Kaolum-e kăto ngămlabu togo lauke="Kaolum said that he would beat me."

Aue ngou kokkeji, nge khwoto ngămpe="I beat the man who stole the mithun" [lit. "who mithun stole (subjunctive), I that man beat"].

Oratio Obliqua.

Speech is reported by keeping the exact words spoken and by preceding or following them by a verb of saying. Occasionally this verb of saying may both precede and follow the words reported.

e.g. **kàn-e aunak-to lam-a shokako lauke. "nyi 'kuk-kur-gu' kou'shí!" lauke** =The wild cat said to

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(**lauke**) the cock that he would meet (**shokako**, the word of the direct speech, "I will meet" you) him in the path. "Do you crow 'cock-a-doodle-doo'!" said he.

The enclitics **-tügh** and **-tŏgo** (?=**tügh-ko**) are also used for "it is said" and "having said" "saying" respectively. But these do not appear to be any other parts of this verb, **tüghta**, **tüghkei**, etc. being only used as parts of the verb **tügh-**='covet.'

It is said that the chief of Sangtok is a swashbuckler.= **Sangtokebu sangbushou lilisizepu-tügh.**

He-togo meibam-shoung angke=The herd of pig agreed and came out.

Meishi kei lauke, "Kābu lang nge longchie kangkuko," lauke. Kei he-togo meishi-la hăn-ti-ke. =The deer said to the dog "I will hold your horns a little" said he. The dog agreeing let the deer put them on.

N.B.—**He-togo** lit.=having said "yes" (**he**). **Ongli-ye nām amai-togo ale** =Ongli, saying that the coin (**nām**) was bad (**amai**), did not take it.

SPECIMENS OF THE CHANG LANGUAGE.

Aunak-si Kan.

Piapoa[1] **aunak-si kànebu song-si ho :**
In olden time fowl and leopard-cat custom and manner
kàn aunakto hătko kibu. Hobaji
leopard-cat fowl having feared was That being so
kane aunakto lama sh^kako lauke
leopard-cat fowl in path in meeting said
"Nyi 'kuk-kur-gu' koushi!" lauke. Kane
You cock-a-doodle-do crow said Leopard-cat
aunak koujini chügsi,[2] **hau akiko**
fowl while crowing when see tooth not having been
kike. Kane ngăma kakte takakke.
was. Leopard-cat in neck suddenly grabbed.
Khwoï aunak-si kan labo.
Thence fowl and leopard-cat enemies.

The Fowl and the Leopard-cat.

In days of old the behaviour of the fowl and the leopard-cat (was thus) : the leopard-cat remained in fear of the fowl. Under these circumstances the leopard-cat, meeting the cock on the path, said (to him), "You crow cock-a-doodle-do!" While the cock was crowing, the leopard-cat happend to observe that the cock had no teeth, so he suddenly grabbed him

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1 **Piapoa**, lit. "in our ancestors'" (time).
2 The termination **-si** usually has the sense of 'if.'

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by the neck. Since then the fowl and the leopard-cat have been enemies.

Kei-si Meishi.

Piapoa keila lang anganyu kibu.
In olden time for dog horn having grown was.
Meishila lang akibu. Măte nam
For barking-deer horn was not. Man oil-seed
shiko kibu. Keito nam müghke.
having pounded was. To dog oil-seed was hungry.
Kei lang anganyu shamto[1] **atla**
Dog horn having grown in mortar for entering
amai. Meishi kei lauke "Kābu
bad. Barking-deer dog said Your
lang nge longchie kangkuko" lauke. Kei
horn I awhile will carry said Dog
he-togo[2] **meishila hăntike. Nam setoä**
agreeing for deer put on. Oil-seed while licking
solangke. Saiko lākko sātke. Khwola
ran off with. Dancing jumping ran away. For that
kei-si meishi labo.
dog and barking-deer enemies.

THE DOG AND THE BARKING-DEER.

Once upon a time the dog used to have horns, while the barking-deer had none. A man had pounded some oil-seed,* and the dog was hungry for it, but his growth of horn prevented (his head) from going into the mortar.[1] The barking-deer‡ said to the dog "I will carry your horns (for you) awhile." The dog agreed and put them on the barking-deer, but while he was licking the oil-seed the deer ran off with them, dancing and jumping about as she ran. And this is why the dog and the barking-deer are enemies.

N.B.—The Thado have an identical story of the dog and the goat.

* *Perilla ocimoides*, L. ‡ *Cervulus muntjac.*

Seangtok.

Piapoa saunyuë mēsiau[3] **shauko shauko**
Formerly tiger animals having eaten eaten
lobu. Hobaji seangtok haghyuoke. Lapan
came. And so tortoise met. Having caught
changsike shaulao-togo anin. Hobaji
struck will eat saying could not. And so

[1] *i.e.* into the hole in the wooden table or "okuli" in which grain is pounded.
[2] lit. "Yes-saying" (**togo** < **tügh-ko**).
[3] **mesiau**, lit. 'animals and birds.

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meishameikok **woklongto** **tegan** **chingke ;**
bad animal sago palm threw down
longla **amaiko**[1] **kike.** **Hobaji**
for getting out being bad was. And so
meiban-shoung **gau** **yũgan** **lüghsüghke.**
herd of wild pig earth having turned up arrived.
Seangtoke " Melbam-shoung, woklong yügan
Tortoise Herd of wild pig, sago palm having turned up
apanyo ngo songanke. Kāne ngo
having thrown away me release. You me
songanlōgōji shaula-yungla-bu[2] **lenlap," lauke,**
if having released eating-drinking things will tell, said
" niesak-niesakpu kato angsi shaula-yungla-bu
early in the morning there if emerge vitals and drink
kia," lauke. He-togo meibam-shoung niesakputo
is, said. Agreeing herd of pig early in morning
angke. Angsi mătebu sieka shatlangke.
emerged. Whenever emerged of man in field came out.
Hobaji matebu lang khwoi shauta.
And so of man crops thence is eating.

The Tortoise.

Once upon a time the tiger went about eating up all the animals until he met with the tortoise. Him too he caught and smote, intending to (kill and) eat him, but could not. So the spiteful creature threw down a sago-palm in such a way that it pinned (the tortoise) down. After a while a herd of wild pig came along, rooting up the earth. "Pigs," said the tortoise, "root up this sago-palm, throw it aside and release me! If you release me, I will tell you where to find food and drink. If you come out early in the morning at the place I will tell you of, you will find (plenty) to eat and drink." The herd of pig complied with his request, and early in the morning came out (where the tortoise told them). The place at which they came out was the field of man, so from that time they continue to eat man's crops.

Anyang-sănkang.[3]

Piapoa yaksa măt ni chelügh kwokla
Once upon a time women man two fibre to strip
yam-to kōke. Măt chie-e " Nona, nyi
to jungle went. Man one Dear, you
chelügh phoko-phoko leta si ai ?"
fibre putting down putting down taking eh ?

---

[1] With verbs expressing a quality a Chang uses the past where we use the present tense.
[2] Lit. 'for eating for drinking' with the adjectival termination **bu.**
[3] **Anyangsankang**=*Sida rhumbifolia*, L.

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lauke. Lūbu-e hau-măt-pam-e chie kănanyu,
said. Other herself alone one having carried
yepechauko "Phoko-phoko leta" lauke.
telling a falsehood putting down taking said.
Hobaji amlang ngügh shanga, phebu
And so false word because of, who had asked
paushi-e chelügh phoake. Unlanglamto
old woman fibre put down. When climbing back
lubu-e "Nona, ungako" lauke. Khwo
other dear will go said. That
paushi-e "Nyi laubu-la phoke" lauanyu
old woman you for having said put down having said
yaksa lubu-e ungke, khwo ungla amaiko
woman other went up, that for going up will be
kike. Chelügh lamto-a nangnakanyu
bad stayed. Fibre while searching having become dark
pukôk-to atanyu yep mangsüghke.
in a hole in a tree having entered to sleep wished.
Saunyushou khwoni kike. Khwopaia longchie
Tiger-cubs there lived. Thereafter awhile
kianyu saunyupi-e meishi thunganyu longke.
having waited tigress deer having carried came.
Paushi-e hatko kibu ka shitkāng shitke
Old woman from remaining in fear broke wind.
Saunyu-e hatko meishi tekan apanyu
Tiger fearing deer having thrown away
sātke. Paushi langnianyu meishi-bu sănsimāng
fled. Old woman it having lightened deer's liver
sunganyu kampuke. Thungan shauanyu
having taken out carried off. Having cooked and eaten
chie phoke; khwo-pai-a paushi
one (bit), put aside; thereafter old woman
lubu-e chăm-to loanyu "Ai-ebu săn
other to house having come Of what liver
shauta?" pheke. Khwo-e "Ngou-bu[1] săn
eating asked. That Mithun's liver
shauta" lauke, Hobaji lubu-e "Nona,
eating said. And so other Dear,
laka happe?" pheke. Paushi khwo-e
wherefrom got? asked. Old woman that
"Nyi-noebu[2] chikap hianyu ngou-bu
Aunt's sisters' bracelets having asked for mithun's

---

[1] The gayal, *Bos frontalis.*

[2] Nyi=a father's sister, a husband's mother, a mother's brother's wife, or a wife's mother.

no=an elder sister, including, of course, cousins senior in point of age or birth. Its use always implies respect. The whole phrase, nyi-no, is intended to include all the important female relatives, people to incur whose wrath would be a serious matter.

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shingkăt-to **phekan** **angtianyu** **săn**
anus-into having put in having put right up liver
phekanke'' **lauke.**
withdraw said.
Paushi **lubu-e** **maimaitham-togo**
Old woman other quite true saying
tāmpe. **Hobaji** **nyi-noebu** **chikap**
thought. And so aunts' sisters' bracelets
pandoto **hianyu** **kāpanyu** **ngou** **lāmla**
all having asked for having put on mithan to look for
hauke. **Ngou** **yam-a** **hăppe.** **Sătyela** **loke.**
went. Mithun in jungle found. For defecating came.
Hobaji **mei** **pakansi** **shingkat-to** **yik-e**
And so tail when raising into anus arm(by)
phekantike. **Ngou-e** **hatanyu** **thuanlangke.**
thrust in. Mithun being frightened dragged away.
Paushi-e **yik** **sunganla** **atikko** **hāppu hāppu**
Old woman arm for withdrawing being unable crying crying
sănlangtike. **Khwopaia** **anyangsănkang**
made to drag along. Thereafter 'anyangsankang'
haghyusi **lubu** **yik-e** **"Anyangsănkang'**
when meeting with other hand by Cousin Hard One
late!'' **togo** **hătke.** **Anyangsankang** **a-**
help saying seized. Cousin Hard One not
-ngokko **yik** **sunganla** **maike.** **Hobaji**
breaking arm for withdrawing availed. And so
chikap **yik-ka** **sungananyu** **ngou-bu**
bracelets from arm having pulled off mithun's
shimung-a **kănanyu** **sātke.**
belly in having carried ran away.

Cousin Hard One.

Once upon a time two women went to the jungle to strip bark for string. One of them said (to the other) "Are you collecting your fibre and putting in one place, dear?" The other, who was carrying about with her the only (piece she had found), falsely replied "I am doing so." And on account of this lie the old woman who had asked put her fibre down. When climbing back the second old woman said "I am going home, dear." When the first replied "Because of what you said, I have left (my fibre) behind," the second went off home. the first stayed, since she could not go back. While looking for her fibre, it got dark, and she went into a hollow tree to sleep. There were tiger-cubs living in there, and after she had been there awhile, the tigress came in with a deer. The old woman, for the fear she was in, broke wind. The tigress, frightened, dropped the deer and fled. When it got light, the

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old woman took out the liver of the deer and carried it off. She cooked and ate it, but put a bit aside. Afterwards the second old woman came to her house. "What liver is that you're eating?" asked she. The first answered "'Tis mithun's liver I'm eating." On that, "Wherefrom did you get it at all, dear?" asks the second. Says the first, "I borrowed the bracelets of my aunts and elder sisters (to protect my arm), and I thrust my arm into a mithun's vent and putting it right up, I pulled out the liver," says she.

The second old woman really thought this was true, so she borrowed all the bracelets of her aunts and elder sisters and put them on and went to look for a mithun. She found a mithun in the jungle; it was going to defecate. When it lifted its tail, she put her arm into its vent. The mithun took fright and dragged her along. The old woman could not get her arm out, and bellowing and howling she was pulled along. At last she met with the 'anyangsankang,' "Help! Cousin Hard One!" she cried, and seized it with her other hand. Cousin Hard One did not break, but was stout enough to pull her other arm out. But the mithun pulled the bracelets off, and galloped away with them in his belly.

TERMS OF RELATIONSHIP.

The Chang Nagas are as at present constituted, an exogamous and stoutly patrilineal tribe, and are of mixed origin. They prohibit marriage between a man and his immediate relations on his mother's side, though this prohibition seems to be in the process of breaking down, as such unions nowadays take place in spite of the disapproval of the older generation. The tribe is composed of a number of different clans each of which claims descent from a common ancestor. Property passes through the male line, and women cannot ordinarily inherit at all.

In the relationship terms given below, it will be noticed that while some of them begin, with an initial *a* others are shewn as beginning with an apostrophe. Those beginning with the *a* are used as they stand without the addition of any pronominal adjective when addressing the person denoted by the term; when they are used with reference to such a person but in speaking to another, the *a* is elided and the pronominal adjective takes its place—*kŭ or kă*,= 'my', *kā* = 'your', *hau*,= 'his', etc. In the case of the terms shewn as beginning with an apostrophe the pronominal adjective of the first person is always prefixed when addressing the person denoted.

The terms used are the same, whether a man or woman is speaking, except where they are differentiated by the use of the letters *m. s.*, *w. s.*, after the term used.

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Father	apo	
mother	anyu	
elder brother	ajai	
elder sister	ano	
younger brother / younger sister	ana	[ordinarily the personal name is used, but on intimate occasions **ana** (or '**na**).]
father's brother	apo	(in address). In speaking to a third person '**po** would be used followed by the personal name. If great precision were necessary '**po-jai-shō-po**, or '**po—na—shōpo** as the case might be.
father's brother's wife	anyu	followed by personal name.
father's sister	anyi	
father's sister's husband	akō	
mother's brother	akō	
mother's brother's wife	anyi	
mother's sister	anyu	or **anyu** followed by the personal name, in address, otherwise '**nyu-no-shōnyu** or **nyu-na-shōnyu** as the case may be.
mother's sister's husband	apo	followed by personal name.
grandparent	api	used in address; in speaking to a third person '**pimai**[1] is used for an actual grandparent on the father's side, and '**pi** for one of that generation; to distinguish sex '**poshopi** (masc.,) and **yaksapi** (fem.) are used for the paternal grandparents, '**nyubu-po** (='mother's father') etc. for the maternal.
husband		personal name used in address; in reference '**lau**' (=husband.) or '**chămpapo** (='male-form-the house') are used.
wife		personal name used in address; in reference '**yak** (=wife) or **chămpanyu** (='female-from-the house') are used.
wife's father	akō	
wife's mother	anyi	
husband's father	akō	

[1] **mai**='true,' 'real.'

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husband's mother	**anyi**
daughter's husband son's wife	**'li.** but in calling aloud, as from a distance, the personal name is used.
wife's brother sister's husband (*m. s.*)	**hauko**[1]
sister's husband (*w. s.*) husband's brother	**pepō**
wife's sister	**haunyu**, or **penyu.**
brother's wife (*m. s.*)	**penyu**
brother's wife (*w. s.*) husband's sister	**haunyi**, or **anyăng**, (or **ano** if much older than speaker).
wife's sister's husband	**pepō**
husband's brother's wife	**nauna** if of same clan as speaker; otherwise **anyăng**; **ano** is also used to a senior.
son's wife's father	**hauko**
son's wife's mother	**haunyu** if of different clan, **haunyi** if of same clan.
son daughter	**'shō** [personal name used ordinarily, **'shō** on intimate occasions].
brother's son (*m. s.*)	**'shōmaupō**
brother's daughter (*m. s.*)	**'shōmaunyu**
brother's child (*w. s.*)	**'li**
husband's brother's son	**'shōmaupō**
husband's brother's daughter	**'shōmaunyu**
wife's brother's child	**'li**
sister's child (*m s.*)	**'li**
sister's child (*w. s.*)	**'shō**
wife's sister's child	**'shō**
father's sister's son mother's brother's son	**'nyangi**, but not so common in address as personal name; in reference **'nyangipō.**
father's sister's daughter mother's brother's daughter	**'nyangsau**, but less common in address than personal name in reference **'nyangsaunyu.**
father's brother's son	**ajai** if older than speaker; if younger **ana** on intimate occasions, on others, personal name.
father's brother's daughter	**ano** if older than speaker; if younger **ana** on intimate occasions, on others personal name.

[1] **hauko, haunyu, haunyi**—said to be a combination of **hau**='his' or 'her' and **ako, anyu, anyi**, the **hau** referring to the speaker's child to whom the person designated will be **ako, anyu** or **anyi** as the case may be. This, at any rate, was the explanation given me by the most intelligent Chang I know.

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mother's sister's son ..	**ajai** followed by personal name, to an elder; to a younger, name only, but **'na** on intimate occasions.
mother's sister's daughter ..	**ano** followed by personal name, to an elder; to a younger, name only, but **'na** on occasions.
grandchild	**'shi**

N.B. **ajai** and **ano** are frequently used merely to show respect, instead of the strictly appropriate terms.

GREETINGS.

On meeting—**maishogo kia luo ?**—*Are you well ?*

Answer—**maishogo kia**—*I am well.*

Reply by first speaker—**thomai**—*Good.*

On parting—**no**, answered by **hoüt.**

N.B.—**No** is ordinarily preceded by **ungta** (*am going home*) or **ngaita** (*am turning back*) etc., and **hoüt** is usually followed by some such expression as **maishogo ungshi** (or **ngaishi** as the case may be) = 'fare well,' but the use of **no** and **hoüt** on taking leave is imperative between persons wishing to observe good manners.

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VOCABULARY.

N.B.—*h.p.* or *l.p.* (*p.*=pitch) after a word indicates that the tone is high or low accordingly.

A

A, An	**chie**
Abandon	**api-**(neg. **ipi-**)
Abate	**hăp-**(intr., of water, neg. **uhüp-**) **ăp-**(tr. of prices neg. **iïp-**)
Abdomen	**shimung**
Abet	**thui-**
Abide	**ki-**
Able	**tik-**; **sügh-** (of carrying)
Abode	**kishang**
Abortion	**sāme shangatpu**
About, *adv.*	**hīnike tīnike**
About, *postpn.*	**shangă**
Above	**mügha**
Abreast	**hĭpshīyàn**
Abuse, *vb.*	**hak-, kük-**
Accept	**le-**
Accurate	**maimetham, mai**
Accusation, make, *vb.*	**phiyu-, ngügh phiyu-,**
Ache, *vb.*	**shāt-**
Acid, *adj.*	**haichappu**
Acquaintance	**yembo**
Acquire	**hăp-**(neg. **ühup-, ihip-**)
Active	**yosoubu** (lit. light legged)
Advance	**tetàngto hau-**
Adversary	**tangpu-lebu** (private enemy) **lapo, labo, la,** (public enemy)
Advice	**ngüh mai**
Adult	**chingkăma**
Adulterate	**kom-**
Adulterer	**thāngpo**
Adulteress	**thāngnyu**
Afar	**ulanji**
After	**paia**
After-birth	**ongchong**; **sāmkung** (also used but incorrectly)
Afternoon, in the	**chaji-paia**
Afterwards	**hobaji, paianyu**
Again	**han**

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Against	-to (in some senses)
Aged	paushi
Agile	săpsăpmembu
Agree	he lau- (when near), hoüt lau-(when distant)
Agreement	māngchie (lit. of one mind)
Ague	māngpōk
Ahead	tetangto
Aim, *v.*	tăkte-
Air	yei
Alike	tigü
Alive	langbu, langkebu
All	păndo
Alone	(mătpăm) chiyong
Along with	paito
Aloof	lulu
Aloud	kāng (lau-)
Already	tou
Also	-kei, -ke
Alter, *v.*	chei-
Alternately	cheyulangoko
Always	pompănto
Ambush, (*n.*)	thobu
Ambush, (*vb.*)	tho-
Among, *postpn.*	chia ; yua (in different senses)
Ancestors	pisipou
Anciently, of old	piapoa
And	tokei, takei ;-si (enclitic to first of two nouns)
Angry, (*adj.*)	kāwàngbu
Angry, be, (*vb.*)	kāwàng-
Animal	mesiau
Ankle	yōnyek
Annoyance, give, (*vb.*)	oti chakti-
Annoyed, be, (*vb.*)	o- chak-(a double *vb.* both roots being conjugated ; neg. üö achak-)
Another	lubu chie
Answer, *v.*	chongeti-, chongei ; langai-, langaiti- (of answer sent from a distance)
Ant (generic)	mĭn
Ant (black)	lāngmin (large), tăksho (small)
Ant (white)	lāngshăng ; tām (lit. earth)
Ant (winged termites)	lāngngo (lit. idiot ant)
Ant (red)	minsăk (large), mimmei (small)
Ant-hill	minhüp

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Antler	**sāklāng**
Any	**aiji ; haubongteko**
Anybody	**auji**
Anything	**ai'ejipesilei, ajamjam pesilei**
Anywhere	**hanbongteko**
Apart	**lulu**
Apartment	**shemchăng,** (a sort of cubicle screened off in outer room) porch=**sangchimang** main room=**chamang** pantry=**jakchuen** back room=**mabongsi** (lit. "wind breaker;" and not a Chang word) machan=**shuan, phang**
Ape	**uô** (huluk), **yuo** (langur)
Apple	**shongpi**
Apply, *vb. tr.*	**nāng-**
Approve, *v.*	**maigu-**
Arise	**lāksăb-**(from recumbent posture), **lu-** (from sitting posture)
Arm	**yik**
"Armadillo" (pangolin)	**kaumei** [(ivory).
Armlet	**maikāp** (brass), **küngkāp**
Armpit	**pakpang, pagamang**
Around	**kaijam, kaijampu.**
Arouse, *v.*	**kāng-**
Arrest, *v.*	**săn-, lang săn-**
Arrive, *v.*	**lüghsügh-**
Arrogant	**līlīsĭzĕpu**
Arrow	**lauchin**
Article	**pēsĭlei**
Ascend	**müghe ăng-**(neg. **u'ang-**)
Ash	**tāp**
Aside	**aghbu, thônbu.**
Ask	**phi-**
Ask for	**hi-** (neg. **ihi-**)
Aslant	**tautokpu**
Assemble	**kāmshe-**(tr. and intr.)
At once	**tō-hali**
Avaricious	**chēbu-shibu**
Aunt	**ānyi, ānyumaunyu.**
Autumn	**sauvonchini**
Auspices, take, (*vb.*)	**pāng li-**
Auspices, (*n.*)	**pāng** (*l.p.*)
Await	**hai-**(neg. **ihi-**)
Awake, *v. intr.*	**pi-**
Axe	**wo**

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B

Baby	**nāshōsi**
Bachelor	**lāpou**
Back, *adv.*	**pai**
Back, *n.*	**tāk**
Back-door	**pālak-kōkăn**
Backwards	**pai**
Bad	**amai**
Bag	**nyinkau**
Baggage	**pēsĭlei**
Bail, *n.*	**sobu**
Bald	**khunkēbu** (bald in front); **kulo-iyangbu** (without hair in the head)
Bamboo	**ngāt**
Bandage, (*vb.*)	**kŭgwa-**
Bang	**hăk**
Bar, (the door) *v.*	**(ko) khin–**
Bar, (for door) *n.*	**kōkhinchin**
Barber	**khūshubu-măt**
Bare, *adj.*	**saubobu**
Bark, (of dog) *n.*	**lăng**; **ngŭgh**
Bark, *v*	**ngong-**, **wong-**
Bark (of tree)	**(pu) khôn**
Barren	**ongkongbu** (of women); **langbu** (of animals): **lāngamaida** (of land)
Barter, *n.*	**namyàkchi**
Barter, *vb.*	**chekwa-**
Base, *n.*	**shing** (lit. arse)
Bashful	**himobu**
Basin	**tei-thung** (of bamboo)
Basket	**kām**
Bask, *v.*	**chānyu chŏkbu-a săt-** (lit. 'sit in sun-warmed [place]')
Bastard	**kongshou**
Bat, *n.*	**pak**
Bathe, *v.*	**mang yu-**(of body); **tiengyăt-**(of face)
Battle, do, *vb.*	**wăpyu-**
Be, *vb.*	**ki-**
Bead	**yàk**
Beak	**kung**
Beam	**kămtăk** (in walls); **chămtăk** (in roof); **ausung** (roof tree)
Bean	**shūmei**; **mōwĕnshu** (smelling bean)
Bear, *n.*	**sāp**

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Beard	kaushăngwi
Beat, *v.*	ngăm-
Beautiful	chügla maibu
Because	-shanga; -bāji, -bajiba
Beckon, *v.*	yik ngōm-
Become	yei-
Bed	shün, shen; yepshăng
Bed-ridden	pola asüghbu
Bee	nau
Beef	masupi
Beetle (dung beetle)	săttŏng
Before	tetangto [ihyung-)
Beg, *v.*	hishau-hiyung-(neg. ihishau
Beggar	hishau-hiyungbu-măt
Begin, *v.*	kāng-(following gerund in la of verb of action to be begun)
Begone	ko
Behead, *v.*	khu tăd-
Behind	pai
Belch, *v.*	kin ngaiti-(lit=return vomit)
Bellow, *v.*	wi-, vi-
Belly	shimung, shumung
Belly-ache	shimung shātta(*vb.*=stomach aches)
Below, *postpn.*	-panga
Below, *adv.*	pangei
Bend, *v.*	dakăn komti-
Besides	tokei
Best	pandoto maibu
Bet	theyo-
Betel	kuijang
Between	chinyua
Beware	māng sang-
Beyond	tānanki
Big	yangbu
Bile	kawekpu
Bind, *v.*	kügh-
Bird	ao
Bird-cage	loenkang
Bird-lime	nai
Bird-nest	aohăp
Birth, give, *vb.*	puk-(of all viviparous beings), hăp- (neg. ühüp) (of human beings, used with na=child), shāt- (with shōshou, of cattle, deer and larger mammals), sit- (with shōshou, of dogs, pigs, cats, and smaller animals)

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B

Baby	nāshōsi
Bachelor	lāpou
Back, *adv.*	pai
Back, *n.*	tāk
Back-door	pālak-kōkăn
Backwards	pai
Bad	amai
Bag	nyinkau
Baggage	pēsĭlei
Bail, *n.*	sobu
Bald	khunkēbu (bald in front); kulo-iyangbu (without hair in the head)
Bamboo	ngāt
Bandage, (*vb.*)	kŭgwa-
Bang	hăk
Bar, (the door) *v.*	(ko) khin–
Bar, (for door) *n.*	kōkhinchin
Barber	khūshubu-măt
Bare, *adj.*	saubobu
Bark, (of dog) *n.*	lăng; ngŭgh
Bark, *v*	ngong-, wong-
Bark (of tree)	(pu) khôn
Barren	ongkongbu (of women); lang-bu (of animals): lāngamaida (of land)
Barter, *n.*	namyàkchi
Barter, *vb.*	chekwa-
Base, *n.*	shing (lit. arse)
Bashful	himobu
Basin	tei-thung (of bamboo)
Basket	kām
Bask, *v.*	chānyu chŏkbu-a săt- (lit. 'sit in sun-warmed [place]')
Bastard	kongshou
Bat, *n.*	pak
Bathe, *v.*	mang yu-(of body); tiengyăt-(of face)
Battle, do, *vb.*	wăpyu-
Be, *vb.*	ki-
Bead	yàk
Beak	kung
Beam	kămtăk (in walls); chămtăk (in roof); ausung (roof tree)
Bean	shūmei; mōwĕnshu (smelling bean)
Bear, *n.*	sāp

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	kaushăngwi
Beard	**ngăm-**
Beat, *v.*	**chügla maibu**
Beautiful	**-shanga; -bāji, -bajiba**
Because	**yik ngōm-**
Beckon, *v.*	**yei-**
Become	**shün, shen; yepshăng**
Bed	**pola asüghbu**
Bed-ridden	**nau**
Bee	**masupi**
Beef	**săttŏng**
Beetle (dung beetle)	**tetangto** [**ihyung-**)
Before	**hishau-hiyung-**(neg. **ihishau**
Beg, *v.*	**hishau-hiyungbu-măt**
Beggar	**kāng-**(following gerund in **la** of verb of action to be begun)
Begin, *v.*	**ko**
Begone	**khu tăd-**
Behead, *v.*	**pai**
Behind	**kin ngaiti-**(lit=return vomit)
Belch, *v.*	**wi-, vi-**
Bellow, *v.*	**shimung, shumung**
Belly	**shimung shātta**(*vb.*=stomach aches)
Belly-ache	**-panga**
Below, *postpn.*	**pangei**
Below, *adv.*	**dakăn komti-**
Bend, *v.*	**tokei**
Besides	**pandoto maibu**
Best	**theyo-**
Bet	**kuijang**
Betel	**chinyua**
Between	**māng sang-**
Beware	**tānanki**
Beyond	**yangbu**
Big	**kawekpu**
Bile	**kügh-**
Bind, *v.*	**ao**
Bird	**loenkang**
Bird-cage	**nai**
Bird-lime	**aohăp**
Bird-nest	**puk-**(of all viviparous beings), **hăp-** (neg. **ühüp**) (of human beings, used with **na**=child), **shāt-** (with **shōshou**, of cattle, deer and larger mammals), **sit-** (with **shōshou**, of dogs, pigs, cats, and smaller animals)
Birth, give, *vb.*	

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Bitch	keinyu
Bite	tăk-
Bitter	khawükpu, khauyekpu
Black	nakübu
Black-guard	lilisizepu-măt
Black-smith	namyaghbu-măt, namyagh-măt
Bladder	okpong
Blank	sauputham, sakteishogo
Blaze	wanlügh
Bleat, *v.*	wi-, vwi-
Bleed, *v. intr.*	si ang-(neg. ŭ'ang or iang-)
Blind	nyektubu
Blister	aotei (lit. "bird water" *i.e.* "egg" *verb* ang-; thus aotei angke=a blister has arisen)
Blockhead	ngōbu
Blood	si, singou
Bloom (flower)	chiben
Blow, *vb.*	măt-
Blue	pi; müghsăk (very dark blue)
Blunder	māt hăb-(neg. ühub-)
Blunt	ü'akpu
Blush	tesinyek satlambu (lit. face red)
Boar	meishou (wild), okloshou (domestic)
Boastful	lilisizepu
Boast, *vb.*	lilise ying-
Boat	long
Boatman	longa-pongbu-măt
Body	măng
Boil, *v.*	lai-(intrans.), laiti-(trans.)
Boil, *n.*	pokpu; sensen (very large), takshou (very small), [*verb* ang-]
Boiling	laibu
Bold	māngpong-yangbu
Bone, *n.*	luo
Book	lie (lit. leaf), ngügh-lie (lit. word-leaf)
Boot	ngôk (lit. "hoof")
Border, (*adj.*).	thoan, thōn; thoana,
Borrow, *v.*	loat-, lōt- (*N.B.* the reflexive imperative lōtpu means "lend (me)")
Bother, *vb.*	kichimti- (withdativeusually)
Bottom	shing

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Boundary	**leilang**
Bow, *n.*	**lau**
Bow string	**lau-buk**
Bowels	**oksi**
Bowl	**pagh**
Box	**pusan**
Boy	**nāshōsi**
Bracelet	**chikap**
Braggart	**yonglambu**
Brains	**haïh**
Bramble	**bīh**
Branch	**puphyek**
Brass	**mang**
Bread	**wantek**
Break, *v.*	**nīn-** (intr.), **nīnti-** (tr.)
Breast	**sün**
Breath	**hàk**
Breathe, *v.*	**hàk hin-**
Breeze	**yeisangshou**
Brethren	**chaisena**
Bright	**măngkēshōku**
Brim	**kaushang** (lit.="chin")
Brimful	**shennetnyu**
Bring, *v.*	**songba-**(imperative **songba**)
Broad	**phôbôh**
Brook	**shumang**
Broom	**chăm-kujin**
Brother	**ajei**[1] (elder), **ana** (younger; also=younger sister)
Brother-in-law	**kōnyāngbo**
Brow	**khŭngcha**
Brown	**saklangbu** (red), **mônjungbu** (drab).
Bubble	**ukpong, okpong** (lit.="bladder")
Bud, *n.*	**chiben thongbu** (lit. "flower not yet open"); **puan**
Buffalo	**tiek, tek** (domestic), **müghka tek** (wild)
Bug	**īh** (*l.p.*)
Bugle	**puthung**
Build, *v.*	**tang-** (of house, etc.); **(hăp) tăk-** (build nest or den of birds and animals), **(hăp) pau-**(of bees, etc.)

[1] This is the form used in address, when the form without the initial **a-** is used it is ordinarily pronounced **jai.**

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Bull	..	..	..	**māsupang**; **masupongsu** (herd bull)
Bully	..	..	..	**līlīsĭzĕpu** (*adj.*)
Bullet	..	..	..	**namlang** (="gun fruit")
Burden	..	..	..	**ōōn**
Burn, *v.*	..	..	..	**chik-**(intr.), **chikti-**(tr.)
Bury, *v.*	..	..	..	**kăn-**
Bush	..	..	..	**achingalambu pu**
Busy	..	..	..	**kămsĭle**; **asauta** (*vb.*=is not at leisure)
But	..	..	..	**pa**
Butterfly	..	..	..	**phatuh**
Buy, *v.*	..	..	..	**cheg-**
By-and-by	..	..	..	**longchie kianyu** (lit. having waited a space)
Bypath	..	..	..	**koalam**

C

Cackle, *v.*	..	..	..	**taguek-**
Calf (of leg)	..	..	..	**youshun**
Calf (of cow)	..	..	..	**masushou**
Call, *v.*	..	..	..	**ngā-**
Cane, *n.*	..	..	..	**li** (*l.p.*)
Capsicum	..	..	..	**houngchep**
Capture, *v.*	..	..	..	**sănat-**
Carcass	..	..	..	**haibu mang**
Care, *v.*	..	..	..	**sangkang-** (lit.="be afraid")
Carry, *v.*	..	..	..	**kăn-**
Castrate, *vb.*	..	..	..	**làkli-**; **songpăt-**(more polite, the former not used before women)
Cat	..	..	..	**tānila** (domestic), **kān** (wild)
Cataract	..	..	..	**leglek**
Catch, *v.*	..	..	..	**chabat-**(as a ball, etc.; **sanat-**, **lāp-**(capture).
Caterpillar	..	..	..	**yàng** (=insect generally)
Cease, *v.*	..	..	..	**liti-**
Centipede	..	..	..	**keklyek-pĭsat**
Centre	..	..	..	**chi, chinyu**
Certainly	..	..	..	**maimetham**
Chance	..	..	..	**müghka** (lit. "spirit", "from sky")
Change, *v.*	..	..	..	**jeyu-, cheyu-**
Channel	..	..	..	**piyungkan**
Character	..	..	..	**jampen** (*l.p.*)[1]
Charcoal	..	..	..	**wankak**

[1] **jampen** *h.p.*=jack-fruit.

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	shi-
Chase, *v.*	**nāmsōbu**
Cheap	**kom-**(lit.='throw in hastily' >used of cheating by insertion of bad stuff, stones, etc. among goods dealt in)
Cheat, *vb.*	
Cheek	**ōwŏmlang**
Chest, of body	**küklang, kukhu**
Chestnut (edible)	**hauchăk**
Chew, *v.*	**nyai-**; (of tobacco—**măm-**)
Chicken-pox	**pŏblishāt**
Chide, *v.*	**kug-**
Chief, *n.*	**sanglipo**; **sangpushou**
Child	**nashōsi**
Childhood	**shōsi**
Chin	**kaushang**
Choke, *v.*	**nangāt-**(intr.); **nyat-**(tr.)
Choose, *v.*	**le-**(lit.='take')
Circular	**yenthuthăm**
Circuitous	**-nong** (in compounds, *e.g.* **lamnong**="circuitous path", **teinong**="circuitous stream")
Civet-cat	**küh**
Clan	**pang** (of men), **sau** (of women)
Claw	**yiksăn** (of hand or fore-paw), **yōsăn** (of foot or hind paw)
Clay	**thamtak**
Clean, *adj.*	**saupobu, săktebu** [1]
Clean, be, *vb.*	**saupo-, săkte-**
Clean, *vb. tr.*	**săkale-, chonge-**
Clear	**saupobu** metaphorical as well as literal), **săkte-shoku** (only used of water, glass, etc.)
Cliff	**lăk**
Climb	**ang-**(neg. **ü-ang-**; followed by accusative)
Clothes	**nei**
Cloud	**sangmei**
Cobweb	**keglak-chăm**
Cock	**aupang**
Cocoon	**(yangebu) hăp**

[1] *N.B.*—When speaking of the human body **săktebu** is used only of actual cleanliness from dirt, and **saupobu** of ceremonial cleanliness only; *e.g.* if a man be about to go hunting which requires that he shall have remained chaste the preceding night, it may be said of him "he can go" (or "he cannot go") "as he is clean"—**saupobu** (or "as he is unclean"-**asaup**).

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Cohabit, *v.*	**cham-**
Cold, be (*vb.*)	**kām-**
Cold (*adj.*)	**li** (of water, metal, etc.)
Cold season	**puang, pwang**
Collect, *v.*	**kāmshe-**
Comb	**kusei**
Come, *v.*	**lo-**; **lota-**(imper. **kayeta**!)= come in; **lōng-**(imp. **kayanga**!)=come out or up; **lowen-**(imp. **kayenna**!)= come down
Come here!	**ka**!
Comet	**kānyăng-yangbu**
Command, *v.*	**ngüghkăm kuashi**
Commerce	**nāmyàk**
Companion	**yempo**
Compensate, *v.*	**phōphan ku-**(lit.=give in excess)
Complete, *v.*	**kămpăm-**; **ying-**(of certain thing only)
Conch	**thouk**
Confine, *v.*	**kailab-**
Conflict, take part in, *vb.*	**lungyu-**
Confusion	**săvesai, peksek**
Consider, *v.*	**mānga tāmàn chüg-**
Converse, *v.*	**ngügh wanyu-**
Cook	**thung-**
Cool	**libu, litām**
Cooly	**ung-kăn-ik**
Copulate	**ne-, neyu-**
Cord	**lügh**
Core	**yāk**
Corn	**shaubu**
Corner	**koh** (external), **nongbu** (internal)
Corpse	**haibu-măng, măng**
Cost	**shangabu** [1]
Costly, be, *vb.*	**nam sek-**
Cotton	**pamba**
Cover, *vb.*	**tĭka kailep-**
Cover, *n.*	**kapchin**
Covet	**tügh-** (*l.p.*) [2]
Cough, *v.*	**ngoku shāt-** (=to have a cough); **ngo shāk-** (=to give a cough)

[1] Strictly an adjective–*e.g.* **lating shangabu**="how much (does it) cost?"

[2] *N.B.*—**Tügh-** (*h.p.*)=to bubble, spring (of water).

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Count	**wie-, vwie**
Counterfeit	**shuo** [1]; **long**
Country	**gautak**; **yam** (uninhabited area)
Courageous, be (*vb.*)	**mangpon yang-, mang yang-**
Cousin,	on male side—see "brother" "sister"; on female side **nyăngē**, which is also used as a form of address between persons of clans which can inter-marry
Cow	**masu**
Cowherd	**masusambo**
Coward	**hăttamkok**
Coy	**hĭmōmăt** (coy person, noun)
Crab	**hin**
Crab-apple	**shangpi**
Crack	**phăndătpu** (*i.e.* broken place)
Crazy	**ngobu**
Creeper	**lügh, leügh**
Crimson	**săklambu; aibu săklambu** (lit. very red)
Cripple	**sohkibu**
Crooked	**kōmatpu, kōmpu; ngeitokpu** (hunch backed, stooping)
Crop (of bird)	**huan**
Cross, (*vb.*)	**tān-**(*i.e.* go beyond)
Cross-bow	**lau**
Crow, *n.*	**aukumatpa**
Crow, *vb.*	**kō-**
Cock-crow	**aunak-kōjin**
Cry, *v.*	**hāp-**(neg. **ihăp-**)
Cubit	**yikho,** (*N.B.*—**4 yikho=1 pak**, the span of a man's outstretched arms)
Cunning	**māngkok**
Cup	**pāngtēthung, thung**
Cure, *v.*	**maishoko kăm-**
Current	**teilu**
Custom	**song**
Cut, *v.*	**wāb-; ak-** (neg. **ü'ak-**or **eäk** of large trees only); **nĭn-**, (cut up—of meat only); **chăm-**(of meat only,=to cut up very small)

[1] Primarily of a rice husk that contains no grain, so of a man who will not work and of a counterfeit coin, *etc.*

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D

Daft	**ngobu**
Daily	**thatke-thatke, thakke-thakke.**
Dam, *n.*	**thangatpu**
Dam, *v.*	**thangat-**
Damp	**rampu**
Dance	**sai ; tum-** (combined with singing)
Dao	**in**
Dark	**naktübu, naktabu.**
Daughter	**yaksa-shou**
Dawn	**ngeyang**
Day	**chālo, chāro, chābŭk, nyet**[1]
Daybreak, at	**chānyu pāmjini**
Daylight	**nisakpu** (*adj.*)
Day and night	**chālo-nangnak**
Dazzle, *vb.*	**nyek kiti-**
Dazzled, be, *vb.*	**nyek ki-**
Dead	**haibu**
Deaf	**obu**
Deaf, be, (*vb.*)	**o-** (neg- **oö-**)
Deaf man	**obang**
Debility	**inyebu, inyetam** (*adj.*)
Deep	**haulangbu, haughbu**
Deer	**meishi** (barking deer), **sāk** (sambhar) [**yāgh**=serow, goat, antelope]
Delay, (*vb.*)	**pai-**
Delirious, be (*vb.*)	**mang shet-**
Demon	**gaukabu müghka** (earth spirit)
Den	**kănyet**
Descend	**yàn-**
Desire	**mangsügh-**(*v. supra* p. 23)
Destiny	**mügh ; thu**
Detour	**nongchung** (*advb.*)
Dew	**nīn**
Dhān	**shaubu** of grain reaped threshed and stored) ; **yōshō** (of grain in the field)
Diarrhœa, have, (*vb.*)	**sĭsak săn-**
Die, *v.*	**hai-** (neg. **ühei-** or **ihei-**)
Difficult	**siek**

[1] **Nyet** is used with words implying number *e.g.*, **lating nyet**=how many days ? (or **chalo lating ?** or both may be used together *e.g.* **chabuk lating nyet ?**), and with numerals *e.g.* **chabuk ni nyet**=2 days, **chabuk săm nyet**=3 days (but **chabuk nyet chie**=1day).

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	thu-
Dig, *v.*	**hali ; thongti**
Directly	**măk**
Dirty	**ôyō-phetyu**
Discord	**mangsăn-**
Disgusted, be, (*vb.*)	**chăk**
Dish	**saupŭtăm**
Distinct	**kôklôkkan ; shumou**
Ditch	(teito) **sĭto ăt-** (neg. **iït-**)
Dive, *v.*	**jān-**
Divide, *v.*	**pāng-**
Divorce, *v.*	**abibu**
Divorcee	**tengmangmang,** [*e.g.* **ngo tengmangmang aba-** "I am dizzy" (**ab-**,neg. **iïb-**, =throw)]
Dizziness	**kăm-** (of work generally)
Do, *v.*	**ngüghbu**
Dobashi	**kei** ; (wild) **shuo**
Dog	**sāmkei-sāmuk** (lit. domestic dog, domestic pig)
Domestic animals	**kōkāp**
Door	**kōkăn**
Door-way	**tukŭtuk**
Dove	**peisile** (lit. 'things')
Dowry	**săn-**
Drag, *v.*	**mang ; mangalibu** (=something dreamt; **manga happe** =saw in a dream, **mang lite** =had a dream)
Dream	**ishing** (lit.=liquor anus)
Dregs	**hele** (ornaments) ; **neisimei** (clothes)
Dress	**yung-**
Drink, *v.*	**ĭn-** (neg. **iïn-**)
Drink, give to, *vb.*	**shi-**
Drive, *v.*	**nila chànke** (=it is laughable)
Droll	**āt-** (neg. **u'āt-**, **e'āt-** ; trans. **atti**)
Drop, *v.* (*intr.*)	**(teia) shămăt-**
Drown, *v.*	**ngāk-**
Drowsy, be, (*vb.*)	**chākatpu**
Drunk	**chākăt**
Drunk be, get, (*vb.*)	**limbu**
Dry	**phatak**
Duck (domestic)	**ngügh nangbu ; (ngobu,=** 'idiot,' is also used)
Dumb	

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D

Dung	**săt**
Dust	**thāmnăt**
Dwarf	**săttong**
Dwell, (*v.*)	**ki-**
Dye	**waïlügh** (red, madder); **pi** (blue, indigo); **nomphāt,** (yellow); **müghsak** (black)
Dysentery	**sisak**; be ill of dysentery= **sisak săn-**

E

Each	**chie chie**
Ear	**nou**
Earwig	**kansung-mēsik**
Early	**ngeyang**
Earring	**kipchi**
Earth	**gan, kau**
Earthquake	**sülu**; *verb*—**sülu ni-**
East	**chāng**
Easy	**sôbu**
Easy, be, (*vb.*)	**sô-**
Eat	**shau-**; **sau-** (of rice when "rice" is not mentioned)
Eaves	**chămsô**; **kaumei** (lit. 'earth-tail')
Echo, *n.*	**ngüghchu**
Echo, (*vb.*)	**ngügh chu-**
Eclipsed be, *vb.*	**chanyu** (*or* **litnyu** as case may be) **-to saunyue shau-**, lit. "tiger eats"
Edge	**thuün**
Effigy	**măt kămpu** (lit.'man made')
Egg	**au-tei**[1]
Elbow	**yikkük**
Elder	**jaishou**
Elephant	**thŭnyū**
Elsewhere	**lobuto**
Embankment	**kaushong**
Embrace	**yik-e pamat-**
Empty, *adj.*	**kongbu**
Empty, *vb.*	**kong-**
Enclose, Encircle, *v.*	**kaichăm-**

[1] lit. "hen-water" cf. **a-tui** in Thado, **chi-le-tha** in Southern Sangtam, **thevu-dzü** in Angami, **onotsü** in Lhota, **an-tsü** in Ao with precisely the same meaning, perhaps reminiscent of a time when eggs were always eaten raw. In Sema, however, instead of **awuzü** as one would expect by analogy, we find **awukhu.**

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End	thuün
Endeavour, *v.*	kăman chügh- (neg. not in ordinary use)
Enemy	lapo, labo
Enlarge, *v.*	yangti
Enough!	khü'ai
Enter, *v.*	ăt- (neg. ü'üt- or iït.)
Entice	sülang
Envy, (*vb.*)	tügh- (*l.p.*, *cf.* 'covet')
Epilepsy	langat shāt
Epileptic, be (*vb.*)	langat ang- (neg. ü'ang-)
Equal	hĭm (of persons); chetei (of things)
Erect	tangshēbu
Escape, *v.*	sāt-, sātan-
Evening	jāsăm, chāsăm
Ever	pompento
Every one	pento
Everywhere	pento-a
Evil, *adj.*	amaibu
Exact, *adj.*	mai
Exaggerate	ngügh ha- (neg. uha-)
Except	apiyan
Excess	phōpan
Exchange	cheyu-
Expend, *v.*	sāk-, sākti-
Expensive, be (*vb.*)	sĕk-
Explain, *v.*	len-
Eye	nyek
Eyeball	nyeklang
Eyebrow	nyekkung
Eyelash	nyekwi
Eyelid	nyekkop

F

Face	thēsinyek, thĕnyăk
Fall	āt (neg. e-üt-, u-àt-)
False, speak	yepe-
Falsehood	amlang
Family	nasho-yăksa (see also 'kindred')
Fan	wànyep
Far	sābu
Fast	kānküthăm
Fasten	kāp-, kĭn-
Fat	hābu[1]

[1] Also metaphorical, e.g. ngügh-hābu="fat in words" *i.e.* one who exaggerates.

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Fat, *n.*	hābu
Fate	mügh-ka (lit. ablative case of mügh, but used as a noun)
Father	apou
Father-in-law	akou
Fatigue	khü
Favour, show, *vb.*	sāno-
Fear	hăt- (neg. uhut-, ehit-)
Feast, (*vb.* trans.)	ŏknin- (neg. ōknin-)
Feather	auwi
Feeble	hai-nyangbu
Feed, *v*, (tr.)	pangti; auk- (neg. ôk-)
Feel, *v.*	păm-, păm ti-
Fell, (trees) *v.*	akan kōti-
Female	-nyu
Fence	pa (*low pitch*)[1]
Fern	ĕkyang
Festival	lăm[2]
Fetch, *v.*	hawan sungba-
Fever	māngpôk
Few	shishŏkō
Field	siek
Fierce, be	māngsăk yem- (yem- lit.= "grow")
Fig	phok (large); tăt (medium); sātcho (small).
Fight	jăk- (make war); wapyu suyu- (fight with weapons); ngăm yu- (fight with non-lethal weapons, riot); ŏyu-, neg. ōyu- (quarrel).
Fill	shenko chin-
Fin	ngauebu kāk (pectoral), chŏngkāk (dorsal).
Find	hăp- (neg. uhüp-, ihip-)
Fine, *n.*	nāmshau
Finger	yikchishou
Finish, *vb.*	kăm păm-, wan-
Fire, *n.*	wàn
Fire, *vb.*	wàne thie-, wàn sāp-, (set fire to); [namthung] kib- (fire [a gun])
Fire-brand	wàntăt (both literal and metaph.)
Fire-fly	thengthou
Fire-place[3]	hokchang, haukchang

[1] Pa (*h. p.*)=red thread. [2] Also="small."
[3] Made of stones. The stone by itself in called hok in this capacity.

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Fire-stick	**wànsong**
Firm	**kānkütham**
First, *adj.*	**shāngbu**
First-born	**jaishōpō** (m.), **nōshōnyu** (f.)
Fish, *n.*	**ngau**
Fish, *v.*	**(ngau) yăgh-**
Fisherman	**(ngau) yăgh-măt**
Fish-hook	**(ngau) yăgh-chin**
Fishing-rod	**(ngau) yăgh-chu**
Fist, close, *vb.*	**yik săm-** (used also of numbness)
Fix, *v.*	**kügh-**
Flame	**wànlōng, lōng**
Flat	**shelibu**
Flattened	**shelitham**
Flay	**ang-** (neg. **üang-**)
Flee	**sāt-**
Flesh	**phie**
Flint and steel	**wànkügh**
Floor	**shuan**: (if not raised—**gau**)
Flower	**puan** (bud); **chiben.**
Fly, *n.*	**meisho**
Fly, *v.*	**pi-; pilang-, pijung sāt-** (fly away)
Foam	**ôkchôk**
Fog	**sangmei**
Fold, *v.*	**nōb-**
Follow, *v.*	**-paito hau-** (neg. **oho-**)
Food and drink	**shaula-yungla-bu**
Fool	**ngobu**
Foot	**yō, yō-năkshang**
Foot-path	**lām, mătmei-lam** (Naga path)
Foot-print	**yōmô**
Footstep	**yo-yagh**
For	**-la, -shanga**
Forbid, *v.*	**khăm-**
Forcible	**hạu-kibu** (lit.=muscle remaining one)
Forcibly	**hāghnyuko**
Ford	**teikātchăng**
Forefathers	**pisipo; piapoa** (in the time of one's forefathers)
Forefingers	**yikchishou shangpo**
Forehead	**khüngchā**
Forest	**lāmăng** (see also 'jungle')
Forget	**mā-**
Forgive, *v.*	**appu-sano-** (neg. **ippu--asano-**);

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Fork	(po-) phek (of a tree or path)
Formerly	mētshāngăt ; shāngăt
Forsake, *v.*	liti-
Fort	wătsükpāmang
Fortunate, be (*vb.*)	hāgh- (neg. ühagh-)
Foul	măk
Fowl	aunăk
Frequently	pompento, pombento
Fresh	săngtengbu
Friend	thangbo ; chena (in address only ; = "my friend")
Frighten, *v.*	hătti- (< hăt- = fear, q. v.)
Frog	yūk
Front	tetang
Froth	ôkchôk
Fruit	pohek
Fruit-stone	pohek-lang
Fuel	pu
Full	shenko
Full-moon	kamteng
Fundament	shingkăt
Fungus	(pulo) nyingashik

G

Gad-fly	ausāp
Gain	ai (the verb used with ai is lot-)
Gale	yeilang (lit. = "wind-rain")
Game (object of chase)	mēi (of fourfooted game only)
Game (of play)	lüghyôh
Garden	phamang, bā
Garlic	lāsung
Gate	kōkăn
Gather, *v.*	pakpa- (of wood, flowers, or anything broken), keiba- (of fruit)
Generation	măthăn
'Genna' be, (*vb.*)	nno-[1]
'Genna' (=forbidden)	shala
Get, *v.*	hăp- (neg. ühüp-, ihip)
Ghost	müghka (seen in daylight—really a sky spirit) ; sou (seen in dreams, a phantom of the dead)
Gift	chongsāk

[1] The word for a festival or ceremony is lăm.

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Ginger	ssi
Girl	mătei
Give, *v.*	ku- (reflex. Imperat. lāpu)
Glad	ōlin- (neg. oölin-)
Glass	lāmang
Gloom	naktüghtam (in day time); chijimomo (at night)
Glow-worm	thengdo
Gnat	kangsung-yōlō
Gnaw, *v.*	hit- (neg. īhit-)
Go, *v.*	hau-
Go!	ko!
Goat	luăn
Gong	lā
Good	maibu
Good fortune, have, *vb.*	hāgh- (neg. ühügh-), mügh-ka mai- (neg. amai-)
Goods	pēsilei
Gourd	chăppăt
Granary	pūng
Grandparent	pī
Grandchild	shi
Grass	hānchăm, phāt, sang
Grass-hopper	koksing
Grasp	hat- (neg. uhüt-)
Gratis	āmlăng
Grave, *n.*	hetangchu
Grease	hābu
Great	yangbu
Green	sangtingbu
Grief	mangto shatbu
Grind, *v.*	ngăn-
Groan	wi-
Ground	gau-, kau-
Grow	ching- (used both literally and of interest on loans, etc.)
Growl	wi-
Guest	yempo
Gun	nāmthung
Gunpowder	nāmthung-phăt ; kar

H

Habit	song
Hail, *vb.* (*i.e.* full, of hail,)	lotă
Hail, *n.*	sün
Hair	kulo (of the human head), uwi (of the human body and of animals)

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Half	phei
Halfway	lamtho
Hammer	namchangchin; lōsăt (= hammer of a gun)
Hand	yik
Handsome	chàn
Handle	singkăt
Hang up	antinpo (neg. ü'intinpo-)
Happy	olin
Hard	kankobu, sekokpu
Hardship	khü
Harelipped	sampung-pheichobu
Harvest time, at	yosholatjini, yolatjini
Hat	khŭn
Hatch, *v.*	pāk- (of sitting in order to hatch), păp- (of the actual moment of hatching out)
Hate, *vb.*	tang-
Hated	tangbu-lebu
Hawk	aulu
Head	khū
Headache	khū-shat
Healthy	ashat-anyabu
Hear, *v.*	tit-
Heart	mangbun
Hearth	haukchang
Hearthstone	hok
Heat, *n.*	lăm
Heat, *vb.*	lăm-
Heaven	mügh (*h.p.*)
Heavy	atcheitam
Heel	yōtăm
Heir	pătpăn, thampo-pătpăn
Help, *v.*	thui-(reflex. imp. thu'ke or thuike), ying-
Hen	aunyu
Hence	haka
Hen-roost	aunak-pākshăng, aushoung, aunak-langshang
Herdsman	shatto-namto-chüghpu
Here	hani
Hereafter	hopaiya
Hiccup	hük
Hide, *v. intr.*	hu- (neg. uhu-)
Hide, *vb. tran.*	huti-, hudin pu-
High	sôkpu
Hill	shong
Hip	phelo
Hit	ngam-; kügh-(hit against,

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hit together); **chăng-**(hit with fist); **hau-**(hit a mark, neg. **uhau-**)

Hither .. .. .. **hato**
Hive .. .. .. **(nau) baubu**
Hoar-frost .. .. .. **nindhu**
Hoe .. .. .. **shāp, kănn** (indigenous); **yōgăn** (Ao); **kutarăng, haung-shāp** (imported)
Hold .. .. .. **chung-**
Hole .. .. .. **khünyet, khünn**
Hollow, *n.* .. .. .. **-koök** (*e.g.* **gaukoök**=hollow in the ground)
Hollow, be, *vb.* .. .. **kōk-**
Honest .. .. .. **mangtangbu**
Honey, ... **nautei**
Honeycomb .. .. .. **nauhăp**
Hoof .. .. .. **ngôk, hāk**
Hook, *n.* .. .. .. **phekläng**
Hop, *v.* .. .. .. **yōsŏng-**
Horn .. .. .. **lāng**
Hornet .. .. .. **nauyang**
Horse .. .. .. **kuri, kori**
Hot .. .. .. **lamaitam; lambu**
Hot season .. .. .. **sulang**
House .. .. .. **chăm**
House-holder .. .. .. **chămbapu**
How .. .. .. **lai**
How long .. .. .. **lālokji** (of time)
How large .. .. .. **lātatpu**
How much .. .. .. **lājuji**
How many .. .. .. **lāting**
How often .. .. .. **lāting-ni**
Humpbacked .. .. .. **ngeitokbu**
Hundred .. .. .. **saungau** (*i.e.* "five score")
Hunger .. .. .. **mügh** (*l.p.*)
Hungry, be, *vb.* .. .. **müghe hai-,**
Hunt, *v.* .. .. .. **shi-**
Hurricane .. .. .. **yeinăk**
Hurry .. .. .. **hali kam-**
Hurt, *vb. intr.* .. .. .. **phăt-**
Husband .. .. .. **lau**
Husk .. .. .. **ek**

I

I .. .. .. **ngô** (agentive **ngē**)
Idiot .. .. .. **ngōbu**
Idle .. .. .. **sôsôbu; sôsôtam; haulu-hauchepbu**

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If	logoji
Ignite, *v.*	wan thei-; wan sāt- (=make fire)
Ill, be, *vb.*	shāt-
Immediate	tou-hali
Immodest	ihimōbu
In	-a, -mang
Indian corn	hangi
Indigo	lām (*l.p.*)
Infancy, in	nashō-tanga
Infant	nashō-hampishō
Inform, *v.*	len-, lenti-
Inhale	shĭp-
Inherit, *v.*	phăt pān-
Inheritance	phăt (concrete noun)
Injure, *v.*	lelu tikwa- (neg. aleluti-)
Insane	langat angbu
Insect	yangsikôk
Instead of	-chela
Intellect	māngbun
Interest (on loans)	phōp
Intestine	sinak (great); silo (small)
Into	-mangto
Invert	kăbe-
Iron	nām
Ivory	thunyuho (*i.e.*, "elephant's tooth")

J

Jail	langsănbu chăm
Jaw	kaushang
Join, *v.*	sāpyu-, chapăt-
Joke, *vb.*	ekyu- (neg. ĕĕkyu-)
Juice	-tei
Jump, *v.*	ai (neg. üï-); pheklang ai- (of high jump as a sport); kaushong ai- (of long jump); niho ai- (jump over); tontăm ai- (of standing jump); phaitontăm ai- (of standing jump backwards)
Jungle	yam; lāmāng (virgin forest); syeng (thick tree and ekra jungle); syeng-yang thick tree jungle); kăpthū (thick low jungle)
Jungle-fowl	aukan

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K

Keep, *v.*	**pho-**
Kernel	**mai**
Kick, *v.*	**kügh-**
Kid	**luen-shou**
Kidneys	**kie**
Kill, *v.*	**lāb-**[1]
Kindred	**thămbo** (on paternal side only)
Kind, be, *vb.*	**sānō-**
King	**chōba**
Kitten	**tānĭla-shōshou**
Knee	**yokük**
Knee-cap	**uwĭlĭk**
Kneel, *v.*	**yoküke thung-**
Knife	**inshou** (*i.e.*, "dao-child")
Knock-knee'd	**yokük-papyubu**
Knot, *vb.*	**shen-**
Knuckle	**yikkük**
Know, *v.*	**min-, nye-** (see also "learn")

L

Labour	**kămsili**
Lac	**minsăktei, min-tei**
Lad	**mătei**
Ladle	**mēëkuh**
Ladder	**chūng**
Lair	**hăp**
Lake	**timsi, tim, sitangbo**
Lame	**sogēbu**
Lamp	**hāntin** (lit.="torch")
Land	**gau, kau,**
Land-mark	**lei-lang**
Land-slip	**limbulak**
Language	**ngügh**
Lap, *n.*	**yōshi**
Large	**yangbu**
Lass	**mătei**
Last, *adj.*	**paibu**
Laugh	**nyi-**
Law, go to, *vb.*	**ngügh peyu-** (lit.="word ask")
Lay, *v.* (eggs)	**(autei) tei-**
Lay, *v.*	**yeptian pu-** (="put lying")

[1] **Lāb**=kill and behead, (used of warfare). To cut or pierce with a dao=**wāb-**; cut or pierce with a spear=**su-**; cut or pierce with bow or gun=**kīpăt-**.

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Lazy	haulo-hauchepbu, sobu.
Leaf	lie
Lean, *adj.*	sünglobu
Learn, *v.*	nye- (neg. ang-) [1]
Leather	khōwun, khoan, khôn, phekhoun
Leave, *vb.*	abi- (neg. ibi-)
Leg	you
Leech	wàt
Left-side	nānē
Lemon	chămpăn
Lend, *v.*	lōtku-, lōkku-, (reflex. imp. lōtpu, <lōt="borrow")
Leopard	kongkuh
Leprosy	imbuh
Liar	yĕppēchawe
Lick, *v.*	se-
Lid	kăpchĭn
Lie (speak falsely), *vb.*	yepē-
Lie-down	leng-
Life	hak
Lift, *v.*	yāgh-
Light, *adj.*	songokpu
Light, *n.*	nisaktam
Light, *vb.* (of lamp, fire, etc.)	chik-, chig-
Lightning	lāngpun
Lip	sămpungkop
Liquor	i
Listen	titko ki-
Litigant	ngügh peyubu
Little	hambishō
Little-finger	yikchishō aghpo (or thônpu)
Live, *vb.*	lang-, langei-
Liver	sănmāng
Living	lang
Lizard	salimang; su (house lizard), unang (flying lizard), litnyu-salimang (sand lizard), salimang-entei-kokpu ("blood sucker"; lit. "egg-thieving lizard")
Load, *n.*	uwan, oan, lăm (*h.p.*)
Loan	lōtpu
Lofty, *adj.*	sôkpu
Log	pūh, pōkung

[1] Nyi- (neg. anyi-), =to have sexual intercourse (of the male), when in the positive form is almost indistinguishable from nye-="learn" "know." *Cf.* the Biblical idiom.

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Long, *adj.*	**lōbu ; süng** (of length as opposed to breadth)
Long, how.	**lālokchi**
Look, *vb.*	**chügh-**
Looking-glass	**màngto-chüghchin**
Loose	**ippu**
Loss	**mau-**
Loss, suffer, *vb.*	**kong-**
Love, *vb.*	**māngsügh-**
Louse	**hāt, hĕk**
Low, *adj.*	**kaubu**
Luck	**mügh** (**mai, amai** ; good, bad)
Luck, have, *vb.*	**hagh-**
Luggage	**pēsilē**
Lungs	**sanglo-losho**

M

Mad	**lăngăt-angbu** [1]
Maid	**măte**i
Make, *v.*	**yāgh- ; kăm-,**
Male	**pōsu** (and v. infra "mate")
Man	**măt**
Mango	**ànpong**
Manure	**săt** ; **săt-tei** (liquid)
Many	**chūng**
Mark	**shĕnla-nyēla**
Market	**pai** [2]
Married	**chămbapu**
Marry	**thulam-** ; **yàk ngā-** (of a man ; lit. = 'wife call'), **lau-lamla hau-** (of a woman ; lit.='go to take a husband')
Marrow	**hai**
Marsh	**tĭm**
Mat	**āmnyu**
Mate	**pang** (male, of a pair of animals), **pi** (female, of a pair of animals)
Match, (lucifer match, etc.).	**wànsăt**
Meal	**shaula-yunglabu**
Meal, take, *vb.*	**shaua-yung-** (neg. **ashau-eyung-**)
Meat	**pheh**
Medicine	**môlí**

[1] Usually taken to mean 'epileptic,' genuine insanity being rare among Nagas ; 'crazed,' 'idiot' = **ngobu ; i-lăngăt** = 'mad with drink.'
[2] An Ao Naga word.

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Meet, *v.*	hăp- (neg. ühup-, ihip-); haghyuo-(neg ühüghyuo); shôkyu-
Melancholy	māng-maubu
Mend, *v.*	kămăt-
Menses	shuksi ; yōpong (euphemistic)
Merchant	nāmsēmăt
Merciful	sānōbu
Message, give, *vb.*	ngügh lenti-
Metal	nām
Meteor	kàncholĭchu-ātpu
Middle, *adj.*	chinyu
Midnight	mütū-ponga
Midday	jāji
Mildew	moanpungbu
Milk	săntei
Mind, *n.*	māng
Mire	thimô
Mirror	màngchüghchin
Mischance	uhagh ; mügh amai
Miserly	măkàt-melapu [1]
Miss, *v.*	uhau- (neg. of hau-='hit')
Mist	sāngmei
Mistake, make, *vb.*	ma-
Mix	yeyu- (of liquids); sühyu-, kēyu- (of solids)
Moan, *v.*	wi-
Mock, *v.*	niyo-
Modest	himōbu [pei
Mole, (animal)	ancho-whutang-yōmangkā-
Mole, (on skin)	phôtnăk
Mole-hill	somchu-ongpu
Money	nām, hongnām, tāchik, sămpok
Monkey	kushou-kumei (all sorts of monkeys); longkam (*macacus arctoïdes*), kumei (*macacus assamensis*) meisū (*macacus rhesus*), yuô (langur), ô (huluk)
Month	lĭt
Moon	lĭtnyu
	new moon—(litnyu) towang ; full moon—(litnyu) kăm-theng; waning moon—(litnyu) sükyàn

[1] Makat-melapu săt-tongke ippu = 'a miser who doesn't even throw dung away.'

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More	**chinyu**
Morning	**ngeyang**
Mosquito	**kāngsung-yōlo** (lit. = "long legged" **kāngsung**)
Moth	**phatuh-longpong**; **phatuh-chingtok** (very big)
Mother	**anyu**
Mother-in-law	**nī**
Mountain	**shong** (a single hill or peak), **kongshuwi** (a range)
Mouth	**sămpung**
Move, *v.*	**kuk-** (intr.); **kukti-** (trans.)
Much	**chūng**
Mud	**thimo**
Murder [1]	**immāt** (∠ **in** = *dao* **māt** = *fault*)
Murderer	**immāt-happu**
Mushroom	**kauyangbun** (∠ **gau** = *earth*, **yang** = big, **puan** = flower)
Muskrat	**somcho**
Moustaches	**sămpungwi**
Mutter, *v.*	**nyamnyam-**
Muzzle, (of gun)	**namtong-sămpung**

N

Naga	**mătmai** [2]
Naked	**măkkong** (< **măt**, *man*, **kōng**, *alone*) [3]
Name	**nyen**
Name, (*vb.*)	**nyenti-**; **nyen pong-** (particularly to name an enemy or hostile village which has been defeated)
Narrow	**kippu**
Navel	**shūng**; **shūng-lügh** (= navel-string)
Near	**nyangbu**
Neck	**ngăm**
Necklace	**ngămdhān** (a necklace that is an heirloom; any sort of bead = yak)
Needle	**nikku**

[1] See also under "poisoning."

[2] **Mătmai** lit. = 'proper' or 'real man', cf. the expression used by the Berg-Damara of S.W Africa "**hau-khoin**" = 'real man'. The Chang call all non-Nagas "**haong**", and regard any complexion other than coppery red as ugly, whether white or black.

[3] So also **gau-kong** = bare land.

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Needy	**shālību**
Negligent	**haulu-hauchapu**
Neighbour	**sàngchung**; **nyangbu-măt**
Nephew, niece	**jaibu-shou** (elder brother's child); **noëbu-shou** (elder sister's child); **naibu-shou** (child of younger brother or sister)
Nerve	**hao**
Nest	**hăp**
Net, (*n*)	**tak** (throw-net), **chala** (drag-net), **kāng** (landing-net)
Nettle	**sĕno**
Never	**latangkei a-....**
News	**ngügh**
Niece, *v.* (nephew)	
Night	**nangnàk**; **miyo** (last night), **thau** (to-night), **niyo** to-morrow night)
Nipple	**sănsămbung**
Nit	**hĕk-tei**
No	**ügh**; **chi** (=not so); **tō** (=don't do so); **agi, aki** (=is not)
Nobody	**auke-agi**
Nod, (*vb.*)	**ku ngūm-**
Noise	**lămen**
Noise, make, (*vb.*)	**lămen-**
None	**aki** (=there is not)
Nonsense	**amnang**
Noon	**chaji**
North	**yungtang**
Nose	**kung**
Nostril	**kungkăn**
Nothing	**aike aki** (there is nothing); **āmlăng**
Now	**tou**
Nowhere	**langkei a-**
Now-a-days	**tounàp-mēnàp**
Numerous	**chūng**

O

Oath	**auto-tāmto** (lit. = "chicken earth"[1])
Oath, undergo (*vb.*)	**auto-tamto nāt-**
Obey	**tīt-**

[1] Because chickens are cut and earth eaten in oaths as to ownership of land.

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Offal	**shengsăt**
Offence	**māt**
Offence, commit, (*vb.*)	**yepechau-**
Offspring	**shōshou**
Often	**pompento**
Oil	**dūtchi**
Old	**hangbu**
Omen	**pang**
Omens, take, (*vb.*)	**pang li-**
On	**tĭgă**
Once	**chiong**
One	**chie**
Onion	**lāsung** (lit.='garlic')
Only	**chiong** [1]
Open, (*adj.*)	**ĭpan**
Open, *v.*	**ip-** (neg. **iĭp-**)
Opinion	**mānga tāmbu**
Opportunity	**kit**
Or	**si**
Orange	**chămpăn, aukochămpăn**
Order, (*n.*)	**ngüghkăm**
Order, *v.*	**ngüghkăm ku-**
Origin	**pak**
Origin, derive, (*vb.*)	**pak-**
Ornaments	**hele**
Orphan	**shochetshou**
Other	**lubu**
Otter	**lām** (*h.p.*)
Outside	**tāng**
Over	**takphaini, takaini, takā** (of horizontal position only) [2]
Overturn, *v.*	**kape-**
Owing to	**shanga**
Owl	**okhongba**
Own, (*adj.*)	**lulubu**

P

Paddy	**youshou**
Pain	**khügh**
Pain, fail, (*vb.*)	**khügh-** (neg. **ukhügh-**)
Painful, be	**phut-**
Paint, *v.*	**tho-**
Palatable	**shaula maibu**
Pale, *adj.*	**thupai, thupaibu**

[1] **Chiong** = 'one only' < **chie** = 'one' and **-ong** = 'only'. Thus **hătchiong** = "only this," **pamma săm-ong** = "only three"

[2] Thus **tak** (lit. = 'back') could not be used of trees, for instance, with which **ku** (= head) is used.

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Pale, turn, (*vb.*)	**thu-**
Palm (of hand)	**yikmang**
Panji	**wüt**
Pant, (*vb.*)	**hăk hin-** (neg. **ihin-**)
Panting	**hăkthôna**
Paper	**hong-lie** (lit. = 'foreigner's leaf')
Paradise	**müghka sang** [1]
Parents	**nyusipou** [2]
Part	**phējàn**
Pass, (*vb.*)	**tān-**
Pat, *v.*	**ĭp-** (neg. **iïp-**)
Path	**lam** (*l.p.*); **mătmai-lam** (Naga path), **kauyagh-lam** (bridle-path)
Pauper	**shālikok**
Pay, *n.*	**īknām** (daily wage), **lĭtnām** (monthly wage)
Peach	**(Haongebu) shongpi** [3]
Peak	**shong tokpu**
Penis	**nie**
People	**mătshoung**
Perceive	**hăp-**
Perhaps	**-lo** [4] (enclitic to verb); **yinglabu**
Pheasant	**aulak** ('dorik' or 'kālij' pheasant); **pongo** (deo-dorik' or polyplectron); **aungo** (*tragopan cerniornis*)
Pick, (*vb.*)	**kei-**
Picture	**măng**
Piece	**thou**
Pierce	**săp-**
Pig	**ok** (or **uk**); **ok làklibu** (as distinct from boar or sow)
Pigeon	**chamo aunak; chamo** ('green pigeon')
Pile, *n.*	**sheang**
Pile, (*vb.*)	**sheang sheang-**
Pillage, (*vb.*)	**yik chāt-**
Pillar	**thaunyu**
Pinch, (*vb.*)	**nyat-**

[1] Pitched high. If pitched low **sang**, = undergrowth. The length of the a is intermediate between ă and ā.

[2] = 'female and male'; inverted **posinyu** = 'husband and wife'.

[3] *Shongpi* by itself means the local peach now found wild, "Foreigner's peach" being the cultivated variety recently imported.

[4] Used in present or future time.

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Pine tree	**pusin**
Pipe	**tākkung**
Pit, (natural)	**kaukok**
Pitfall	**püng**
Pity, *n.*	**sano**
Pity, (*vb.*)	**sano-**
Place, (*n.*)	**kauwan**
Place, (*vb.*)	**fu-**
Placenta	**sāmkung, ongchong**
Plain, (*n.*)	**yuomang**
Plains	**Haongyam**
Planet	**kānyang** [1]
Plank	**wape**
Plant	**pu**
Plantain	**thongo**
Plantation, (of trees)	**pupung, pulāk**
Plate	**pau**
Play, *v.*	**lüghyô chaiyu-, lüghyôwa--no** (suffixed to imperatives).
Please, (*interjection*)	**olin-** (neg. **oölin-**)
Please, (*vb.*)	**chan**
Pleasing	**teyola**
Pledge	**păk-**
Pluck, (flowers, etc.)	**pôp**
Pocket	**sămpung**
Point	**kompu; putei** (for arrows); **gōm**
Poison, (*n.*)	**kompu-**
Poison, (*vb.*)	**kommāt**
Poisoning	**kompu-măt**
Poisoner	**sitangbu**
Pond	**si**
Pool, (of river)	**shalibu**
Poor	**sān**
Porcupine	**ok-phe**
Pork	**mang** (*h.p.*)
Portrait	**chăk**
Pot	**mokma**
Potato	**ketamchu**
Potato, (sweet)	**ye-**
Pour	**kangbu; ngüghkăm kangbu**
Powerful	**sou takti-** [2]
Practise, *v.*	**māng săng-**
Precaution, take, (*vb.*)	**tetangto hau-**
Precede	

[1] A planet appearing close to the moon is called **kāntăk** = "fighting cat" because it appears to fight with the moon, jumping close up to it and then jumping away.

[2] Lit. = "make to do upon a likeness."

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Precipice	lăk
Pregnant	shōkibu ; amaiayungbu (euphemistic)
Prepare	lamli- (of going) ; takti- (of doing)
Present (to a distinguished guest), *n.*	ōkti (lit. of a pig killed to feed a guest)
Press, *v.*	shang-
Pretty	chüghla maibu
Previously	shangăt
Prick, *v.*	săp-
Profit	ai
Prolific, be, (*vb.*)	hā-
Promise, (*vb.*)	thi-
Prompt	sapsapmembu, săpsĭkmĕmbu
Proper	mai
Property	chamchong-siekpai (real), peisile (personal)
Prosperous	keibu
Prostitute	chasasaza, chasasaza-lok-lok
Protect, *v.*	pit-
Protector	mătpitpu
Proud	māngatàmbu
Pull	chang-
Pumpkin	chilimo
Punish, *v.*	"saza" ku-
Puppy	keishou
Purchase, *v.*	cheg-
Pure	sauphobu
Purr, (*vb.*)	ngak-
Purse	neilôp
Pursue, *v.*	shin sātti-
Push, (*vb.*)	chāng sātti-
Put, *v.*	phu-
Put on (clothes)	ne
Putrid	nyaghbu

Q

Quagmire	tim, thim
Quail, *n.*	yemo
Quake	nyaknyag-
Quarrel	ŏyu-, ŏyo-(neg. ōyu-, oöyo-)
Quarter	thou
Quench, *v.*	chuan-
Question	phebu ngügh (lit. "asked word")

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Quickly	hali
Quicksand	pătsangküngkăm
Quietly	sămmele

R

Rafter	lăkngo ; kekip
Rain	lang
Rain-bow	yibuk-shangchap[1]; mili-shĕn
Rains	sulang (as opposed to pwang 'the cold weather')[2]
Raise, *v.*	phon- (partially), bamon- (completely)
Rake	hausau
Ramble, *v.*	amlang pai-
Rape, (*vb.*)	tōguseko shanglap-
Rapids	lieklek
Raspberry	pi (generic); năngnyenămpi
Rash, (*n.*)	poplitshat
Rat	yibuk (generic); chămpabu yibuk (house rat)
Rattle, (*n.*)	hōkhŏk, whohôk
Raw	săngtingbu
Razor	kujin
Reach, *v.*	yik shing- (with arm)
Read, *v.*	(lie) ue (neg. awe-)
Ready, be, (*vb.*)	lamle-; ham (neg. ühum-)
Rear	paini
Rebuke	hak-
Receive	li-
Recline, *v.*	yep-
Recognise, *v.*	shĕn-
Recollect, *v.*	taman-
Rectify, *v.*	kamat-, yenti-
Red	săklangbu
Redeem, *v.*	teyobu senga-
Reel, *n.*	lekinchin (of cotton); lăpchin, kaichin
Reflect	manga tam-
Reflection	mang
Release, (*vb.*)	senga-
Relish, (*vb.*)	mügh-
Remain, *v.*	ki-, tămu ki-
Remainder	chōbu
Remember, *v.*	taman-
Remove	kuktí-

[1] Lit. = "mouse's loofa."
[2] The Chang divide the year into two seasons.

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Rent	**pounam**
Repair, *v.*	**kamat-**
Repeat	**takei lau-**
Report, (of a gun)	**lang**
Resin	**punai**
Rest, *v.*	**hak so-**
Return, *vb. intr.*	**kăpean**[1] (or **kapeanyu**) **ngai-**, **kăpean**[1] **lo-ngai-**, [Imperat. k[1]. **kangaya**]
Revenge, (*vb.*)	**poklam-**[2]
Revenue	**alimelan**
Revolve, (*vb. tr.*)	**kai-**
Reward	**chongsa**
Rhinoceros	**kaumang thunyu** (lit. = the elephant in the earth)
Rhododendron	**aungchi**
Rice	**āng** ; **nyăk** (cooked)
Rich	**keibu, keibu yangbu**
Right	**mai** (in all senses)
Rim	**sămpung**
Rind	**shung**
Ring, *n.*	**yentōbu pān**[3]
Rinse, *v.*	**hōkan ap-** (neg. h. **üüp-**)
Ripe	**sămpu, libu**
Ripen	**li-, săm-**
Rise, *v.*	**lāksăb-** (from recumbent posture) ; **lo-, lu-** (from sitting posture)
River	**yungmang**
Road	**lam** (*l.p.*) ;[4] **kauyaghlam** (bridle path)
Roar, *v.*	**we-**
Room	**sangchimăng** (porch),[5] **chămang** (main room), **jakchun** (pantry), **mabungsi** (wardrobe)
Rock	**lāng**
'Rohi'	**nyăkitei**
Roost	**lāng-**
Root	**li**
Rope	**lügh** (*h.p.*)

[1] **Kăpean** is only used of immediate return ; otherwise it is omitted.

[2] Used of blood feuds.

[3] **Yentobu**="circular." There is no real word for 'ring' in Chang as the Changs do not wear rings.

[4] **Lam** is a Naga path as opposed to **kauyaghlam**, a bridle path dug out of the side of the hill and levelled.

[5] A separate room inside the porch or 'veranda' of the house is called **shemchăng**. See also under 'apartment.'

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Rotten	nyaghbu
Rough	sātsāttam, toktok loghlok
Round, (*adj.*)	pamsambu
Rub, *v.*	shô-
Rub hard, (*vb.*)	tututti shô-
Rule, *n.*	song
Run, *v.*	lāng-
Rupee	nām, tāchik, sămpak
Rust, (*n.*)	houng
Rust, (*vb.*)	houng pau-

S

Sack	nelōk
Sad	māngmaubu
Sago-palm	mei; meinyu (edible), hăp-mei (false)
Salary	litnam
Saliva	nyok
Salt	chăm
Salute, *v.*	yik ku-
Same	chetei
Sand	pătsăng
Sandfly	chōttăm
Sap	putei
Save, (*vb.*)	langti-
Saw, *n.*	pulatchin
Say, *v.*	lau-
Scald,	tei au-
Scar	nali
Scatter, *v.*	titoke-hitoke shin sātti-
Scent, (hunting)	lămkida
Scold, *v.*	hak-
Scoop, *v.*	mang lai-
Scorch, *v.*	chōk-, kāng-
Scorpion	hinebupi (lit. 'the crab's mother' as in most Naga and Kuki tongues)
Scrape, *v.*	kăt-
Scratch, *v.*	nyik-; phek-(of fowls, *etc.* scratching the ground)
Scream, *v.*	wi-
Search, *v.*	lām-
Seat	sătchang, kămsok
Second	aulangkago[1]

[1] Second of three; of more than three **shangbu tankabu** is used= "the one after the first." Of two only **paibu**="the one after," "the last," would be used.

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Security	teyola, sobu
See	hăp-(neg. ühüp-, ihip-; also=meet with, get); chügh-(=look at, examine)
Seed	lila
Seize, *v.*	sanat-
Seldom	chie chia, chia paia
Self	mătpambu, poshou
Sell, *v.*	yāk-
Send, *v.*	kuti-(of sending away from speaker), laputi-(of sending towards speaker)
Sense	song
Separate, *vb.*	chān-(intr.); chānti-(trans.)
Sept	jămpăn
Serau, (capricorn)	yau
Servant	sāmbu; sambuyaubu (derogatory)
Set aside	pheijeni (*or* nongboa) po-
Set down	po-
Severe	sekpu-lakpu
Several	atchi
Sew, *v.*	shi-
Shade	yemikobu
Shadow	mang
Shake	hōk- (neg. uhuk-)
Shallow	pabebu
Shame	nimou
Share	phĕchan
Sharp	ākpu
Shave, *v.*	khū shu-
Sheath	mobo
Sheep	Haongebu luăn, minkei luăn[1]
Shelf	wape
Shell	kôp (used of any hard covering of animals or plants)
Shield	ayi
Shin	yōliku, yōkung
Shine, *v.*	mang sho-
Shiver	lügh-
Shoe	ngok
Shoot, *v.*	kib-
Short	kamsebu (of stature); tubu
Shoulder	phākchô
Show, *vb.*	chüghti-
Shrivelled	kônchokpu

[1] *i.e.*, "Foreigner's goat," "woolly goat."

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Shut, *v.*	**kap-**
Sick, be, *vb.*	**shāt-**[1]
Side	**lan ; na**
Sigh, *vb.*	**hakthoun-**
Silence	**sammeli**
Silver	**sămpak-nām**
Simul (bombax) tree	**lagh'an**
Sing, *v.*	**chiya lau- ; tōm-**(=sing and dance)
Single	**chiong**
Sink, *v.*	**nyĕmăt lang-**
Sip, *v.*	**sămpung namti-**
Sister	**anou** (elder), **ana** (younger)
Sister-in-law	**penyu**
Sit	**săt-**
Site (of house)	**chămshang**
Skin	**khôn**
Skull	**khulu**
Sky	**mügh** (*h.p.*)
Slander	**nyenchăt**
Slave	**au, mătau** (*l.p.*)
Sleep, *v.*	**nyiekăt shi-** [2]
Sleepy, be, (*vb.*)	**ngak-**
Slender	**-lōshou** (as enclitic, *e.g.* **măt-lōshou** a slender person; of living things only)
Slightly	**amlangong**
Slimy	**lŏklŏkpu**
Slip, *v.*	**shekat-**
Slippery	**shĕkchĕkpu** (of ground, *etc.*; **lŏklŏkpu** (of *e.g.* things eaten)
Sloping	**tōkshangan ; anglek**
Slowly	**māngyāngsho, hangshogo**
Slug	**nyingkēkāptung**
Sluggish	**kitkai-mangyangbu**
Smallpox	**siangpō**
Smell, *n.*	**lăm** (*l.p.* ; **lăm**, *h.p.*,=' load ')
Smell, *vb.*	**lăm hi-**(neg. **ihi-**)
Smile	**sămpung men-**
Smoke, *n.*	**wankükh**
Smoke, *v. tr.* (of tobacco)	**[tākkung] yung-**(of a pipe), **[shigrit] muk-**(of cigarette, *etc.*
Smooth	**loklok** (in the sense of shiny, polished)

[1] *i.e.*, 'be ill'; for vomit *v. infra.*

[2] **yep-**="to lie down," whether asleep or otherwise, and so is often used where we should use the verb "to sleep."

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Snail	nyingkēkāptung
Snake	pīnyu
Snare, *n.*	yōchāp, sung, tin, autin, ngămchap
Snare, *v.*	tīnsuwet san-
Snatch	chāp-
Sneeze, *n.*	hatchi
Sneeze, *vb.*	hatchi shi-
Snipe	nāmkung-au
Snow	nindhu
Snore, *n.*	ngākngāk
Snore, *v.*	kongkăna wi-
So	hai, khwola
Soak, (*vb. trans.*)	[tei-a] shăm-
Soap	vwi, uwi
Socket	thôngtu
Soft	inyaibu
Soil, *n.*	thām
Soil, *v.*	măk langti-
Something	aichie
Sometimes	jiajia, chisüpai
Someone	auchie
Somewhat, (*adv.*)	hanshogo
Son	shou
Song	chiya
Soon	hali
Sore, *n.*	mou
Sorrow	māngmau
Sound	lang
South	yungkük
Sour	haicheppu
Sow, *n.*	oknyu
Sow, *v.*	kie-
Span, *n.*	yikăm
Spare (of the body)	mătlōshou (n)
Spark, *n.*	wanlegh
Speak, *v.*	lau-
Spear	aubu
Spectacles	lāmang, nyekmang
Spider	keklek, kiekliek
Spill, *v.*	ăp- (neg, ip-)
Spin, *v.*	lei shik-
Spirit (god)	müghka[1]
Spirit (drink)	lambu i
Spit, *v.*	[uyŏk[2]] tok-
Spittle	uyŏk
Spleen	siek

[1] *i.e.*, "from heaven."

[2] sometimes ōk.

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Split, *v.*	**peinyin-**
Spoil, *vb.*	**lelutigu-**
Spoon	**nyaksok, peisek, shiklak**
Spread out	**im-** (neg. **iïm-**)
Spring (of water), *n.*	**teikük**
Spring, *v.*	**toamtŭm ai-** (neg. **iï-**); **tŭgh-** (*h.p.*), of water
Spring (season)	**kīlahekma, wàna-wànchik**
Squirrel	**kongi**; **khei** (great black squirrel); **lŏŏk, nyang** (flying)
Squeeze, *v.*	**nyat-**
Stab, *v.*	**hăn-** (neg. **ühün-**)
Stagger, *vb.*	**thōngninyităm ki-**
Stagnant	**shuibu**
Stalk, *n.*	**pugung**
Stamp, stamp on, *v.*	**năk-**
Stand, *v.*	**luo-**
Stand up, *vb.*	**luo-**
Star	**kancholĭchu**
Stare, *vb.*	**săm-**
Startle, *vb.*	**mokti abi-** (*neg.* **ībi-**)
Steal	**kok-**
Steel	**suan**
Steep	**shimpuk**
Stick, *n*	**chu**
Stile	**tām**
Sting, *n.*	**lügh** (*l.p.*)
Sting, *v.*	**lügh-e chün-**
Stir, *v.*	**seke-**
Stock (of gun on cross-bow)	**lausĭn**
Stockade	**wütsăkpa**
Stone	**lang**
Stomach	**shiyang**
Stoop	**kăp**
Stop, *v.*	**hai-** (intrans.); **haiti-** (trans.)
Storm	**yeilang**; **yeilang-susuli**; **yeinăk** (very severe)
Story	**pongügh-pingügh** [1]
Stout	**minkei** (lit. "woolly") [2]
Stream	**chucho, chumang**
Straight	**tangshei**
Straighten	**tangshei-ti-**
Stranger	**yempu**

[1] Lit. "Father-Mother-word."

[2] **minkei** is the word for a long coated dog that can only hunt for a short time because it gets exhausted owing to the thickness of its coat. Hence applied to any fat or unwieldly person.

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Straw	youkung
Strike, *v.*	ngăm-
String	lügh (*h.p.*)
Strong	kāngkaibu, haukibu
Subject, *n.*	păngsiyen
Suck, *v.*	shăp- ; shĭp-
Sudden	mangtie
Sun	chanyu
Sunlight	chā
Sunrise, at,	chanyu angjini (*or* pāmjini)
Sunset, at,	chanyu năpjini
Sure	mai
Swallow, *n.*	lolengchang (generic)
Swallow, *v.*	leang-, sui-
Swarm (of bees)	[nau] haksobu
Swear, *v.*	thiyu- [1]
Sweep, *v.*	gu-
Sweet	teishikpu-
Sweet-heart	tangpou (masc.), tangnyu (fem.)
Swift, *adj.*	yausobu
Swim	tei it- (neg. iït)
Syphilis	haongin

T

Tabu	shala
Tail	mei
Take	le-
Talk	ngügh wànyu-
Tall	lōbu
Tame	sāmbu
Tank	süi
Tapeworm	mit-thu
Taste, *v.*	chăp-
Tear (of the eye), *n.*	nyeksītei (lit.='eye-blood-water')
Tear, *v.*	chitnin-
Tears, shed, *vb.*	nyeksi ang-
Tell, *v.*	len-
Tempest	yeinăk
Tent	neichăm (lit.='cloth-house')
Terrible	mangsăk
Testicle	tăm, tămlang
Than	touchi
That	khwo

[1] thiyu=to swear verbally, autotam-to hau-=to take a formal oath.

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Thatch	lang
Then	kajini
There	khwonĭ, kanĭ
Therefore	khwola, hola, khwoï
They	hauan
Thick	yangbu
Thief	kokpu ; ampakoklok (abusive)
Thigh	youshi
Thin	kôplinbu (of persons), peglebu (of materials)
Think	tām-
This	ho
Thing	pēsile
Third	sămpobu
Thirsty, be, *vb.*	tei la-
Thorn	chăk
Thou	nuo, nô
Thousand	sau-an-ngauni
Thread	lei
Through	chi, chito
Throw, *v.*	tig-
Throw away	ap- (neg. ip-)
Throw down, (*lit.*)	tigan yanti-
Throw up, (*lit.*)	tigan anti-
Thumb	yikpăm
Thunder, *n.*	lōngmāk
Thunder, *vb.*	lōngmāk mak-
Thus	hai
Tickle	chăge chăge khi-
Tie, *vb.*	shen-
Tiger	sauyang ; saunyu (generic)
Tigress	sauyangnyu
Tight	lükti shembu ; kāngkhübu[1]
Tighten	lükti shenti- ; kangkhüti-.[1]
Timber	wa
Tipsy	chăkchăkmākmăkpu, chākătmākătpu (abusive)
Tired	mangbu ; khüshokpu.
Toad	yūknyĕk
Tobacco	masün
To-day	thāt
Together	pănto
Toe	yōchishou
Tomb	hēshang
To-morrow	nyet

[1] The first of the two applies to things fastened by knotting, the second to things fastened by twisting.

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Tongue	lishang
To-night	thau, thau nāngnăk.
Too	-ke
Too (much)	aibu
Tool	? insōbu (< in-si aubu, 'dao and spear')
Tooth	hau
Top, *n.* (the toy)	yàn
Top, *n.*	khu
Top, on, *adv.*	khua
Topsy-turvy	săpēsai
Torch	hāntin
Tortoise	seangtok
Touch, *v.*	mēti-
Track	yōmu
Trade	nāmsei
Transparent	săkteshoku
Trap, (*lit.*)	punong
Travel	yento hau-
Traveller	wagomăt, yemmăt
Tree	pu
Tremble	nyāk-
Trench	phā, phākuk; teilam (= 'water channel')
Triangular	shingsimbu
Tribe	khūnăk
Trigger (of gun or cross-bow)	lōphai
Trip, (*v. tr.*)	kin-, kinan tōngti- (with leg or foot); luyam tōngti (by catching with hand or cord)
Trouble, get, *vb.*	shetti-
True	mai
Trumpet	puthung
Try, *v.*	kămăn chüg-
Tumble, *v.*	āt- (neg. üāt-), tōng-
Turn, *v.*	lăp-
Turn round, (*vb.*)	săpe-
Twin	pŏkpu, pŏkpushou
Twist, *vb.*	kügh-

U

Ugly	achan
Unable, *adj.*	asügh
Unable, be, *vb.*	asügh-
Unawares	mangtie
Uncle	apo jaishopou (father's elder brother)

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	apo nāshopou (father's younger brother)
	akou [**jaishopou** *or* **nāshopou** as the case may be] (mother's brother)
Unclean	**măkpaubu** (dirty); **ashaubu** (uneatable); **ametibu** (untouchable)
Uncover	**ip-** (neg. **üp-**)
Under	**panga, pangto**
Understand	**manga shōk-**
Underwood	**siyeng**
Undo	**sengku-**
Undress, *v.*	**(nei) seng-**
Unequal, be, (*vb.*)	**chĕtei aying-; ayen-** (of soil, etc.)
Unfold	**seng-**
Ungrateful	[no word, ? because ingratitude unknown, or because gratitude unknown ?]
Unhappy, be, *vb.*	**mang mau-**
Unhealthy	**amaibu**
Unite	**tangti-**
Unripe, be, *vb.*	**asăm-, ali-**
Unroll	**seng-**
Up	**mügha**
Upright	**tăngshităm lobu**
Uproar, make, *vb.*	**laman-**
Urine	**chĕt**
Urine, pass, *vb.*	**chĕt chet-**

V

Vagabond	**sātpu-maubu; shoungto** (abusive)
Valley	**gaukok**
Valuable	**sekpu**
Vegetable	**biekshik**
Vein	**hao, silügh**[1]
Verdant	**pusang**
Very	**aibu, aibo**
Vex	**kit chimti-**[2]
Vigilant, be, (*vb.*)	**nyek sang-**
Vigorous	**sēkok kangkobu**

[1] **Hao** is really a nerve or tendon; **silügh** lit. means "blood-cord", obviously the correct word.

[2] A frequent expression is—

kit ta-chimti, ota chākta='don't worry me! I am getting deaf and drunk' (*i.e.* with your troublesome chatter).

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Village	sāng
Virgin	mătei (=girl)
Voice	lang
Vomit	kin-, eok kinge-
Vulture	aulu-pheshaubu
Vulva	shūk

W

Wade	teimangto pai-, teimang sham-
Wagtail	tăktăk au
Wages	litnām
Waist	shenchang
Wait	hai (neg. ihi), haiko săt-
Wait!	tamu!
Wake, *v.*	pi- (intr.), piti- (tr.)
Walk, *v.*	pai-
Wall	kămthang
Walnut	lakket
Want, *v.*	mangsügh-
War, make, *vb.*	wāpyu-
Warm	lamaibu
Warrior	lākpu
Wash, *v.*	yu- (bathe), nyet- (wash the face), săk (wash the hands, mouth, clothes, etc.)
Wasp	nau (generic)
Waste	se-; amlang ap- (neg. üap- or iïp-)
Watch, *n.*	chanyupi[1], chānyumang
Water	tei
Waterfall	teishālāk
Wax	naulăp
Way	lām (*l. p.*)
We	săn (including person addressed); kăn (excluding person addressed); săji, kăsi (dual)
Weak	hainyangbu
Wear (clothes), *vb.*	ne-
Weave, *vb.*	(nei) tāk-
Web (of spider)	kiekliekchăm[2]
Weed	sang
Weep	hāp- (neg. uhāp-)
Weigh, *v.*	hawan chüg-

[1] Chanyupi='wife of the sun,' though the termination -nyu indicates the femininity of the sun herself. Chanyumang='sun's shadow.'

[2] ='spider-house.'

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Weir	chaishong, kāp
West	chànap
Wet	namlengtăm, nambu
What	ai
Whatever	taghketage, haghbangtügh khu
When	lātang
Whence	lāka
Where	launi
Which	lau
Whirlwind	yeinăk
Whisper, in a, *adv.*	hubangsho
Whisper, *vb.*	hubangsho lau-
Whistle, *vb.*	sui lau-
White	thupaibu
White-ant	langshang; lango (winged)
White thread	leithu
Who	au
Why	aila
Wicked	lilisizibu
Wide	kāng
Widow	lātnyu
Widower	lāpou
Wife	yaksa, yak; chămpabu[1]
Wild	yam, ushipang
Wild animals	meisi'ao
Wilful, be, *vb.*	tŭkū-sĕko kam-
Will	māng
Wind, *n.*	yei
Wind, *vb.*	kai-
Windbag	ngügh-nyaibu (adj.)
Wing	kāk
Wink, *vb.*	nyek mu-; nyekphe mu- (with one eye only)
Winter	puang, kāmalegha
Wipe, *v.*	hăm-, haman ap- (neg. iip-)
Wire, *n.*	nāmlügh[2]
Wiry (of men)	matloshou
Wise	mangli-mangsang
Wish, *v.*	tām-, mangsügh-
Witch	seibu
With	chāmpo, paito
Withered	limbu
Within	mang
Witness	hăppumăt, pilibumăt

[1] 'Your wife'=kābu yaksa, or kā-yak but not kābu yak, nor kā-yaksa. Chămpabu='house-keeper,' literally.

[2] =iron creeper.

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Woman	**yaksa**[1]; **nyukwa** (elderly), **paushinyu** (old)
Womb	**sām**
Wonderful	**mangpangbu**
Wood	**pu**
Woodcock	**nāmkung au**
Woodpecker	**pupăp au**
Woolly	**minkei** (a noun primarily denoting the long-haired variety of Chang dog, but applied to other furry animals also, as an adjective, and used derisively of fat persons)
Word	**ngügh**
Work, *n.*	**kamsilei**
Work, *v.*	**kam-**
World	**gautak**
Worm	**kingkin** (earthworm); **mit** (of the intestines of man or animals)
Worm-wood	**săngtī**
Worst	**aibu amaibu**
Wound, *n.*	**lelu**; **mou** (when no longer fresh); **pheli**
Wraith	**müghka**[2]
Wrap, *v.*	**shuo-**
Wrestle, *v.*	**khūyo-**
Wrinkle	**khônchŏk, khoanchŏk**
Wrist	**yikngămshang** (lit. "hand-neck")
Write, *v.*	**thu-**
Wrong	**yĕpē** (false); **hangusuku** (inverted); **amai** (bad)

Y

Yam	**kēthamchu**
Yawn, *vb.*	**sou sai-** (lit.=ghost dance)
Year	**puo**
Yearly	**puopua**
Yellow	**sămcheibu**

[1] The feminine terms for animals are occasionally used abusively, *e.g.*—**mătnyu**, 'female human' (**mătpang** 'male human') thus ranking the person addressed with the so-called "lower creatures."

[2] Wraiths of the living are regarded as spirits simulating the appearance of mortal men, and not as astral bodies of the persons thought to be seen. **Müghka**='sky spirit' (lit. "sky-from").

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Yes	**hagh**
Yesterday	**miet**
Young	**heshou**

Z

Zephyr	**yeisangshou**

ADDENDA.

Alder	**ningsa**
Area (measures of)	**2 thu = 1 noklam** **2 noklam = 1 paile** **2 paile = 1 siekpai** (*i.e.* a man's cultivation for one year) about 100 **siekpai** = 1 **lijet** (*N.B.* **thu, noklam** and **paile** only used of land actually under cultivation)
Autumn	**saupăn**
Clever	**mangsangbu**
Cormorant	**yungau**
Cuckoo	**kuku**
Foreigner	**haong**
Flute	**pithung**
Gonorrhea	**langyang, nishat**
Hornbill	**langi ; pi'au ; auyang**
Hound (for hunting)	**mēshikei**
Hunter, huntsman	**yamăt, mēshimăt**
Jew's harp	**kongkin**
Madar tree (*Erythrina*) ..	**happung**
Marten (*mustela indica*) ..	**lāt**
Measles	**sicho**
Mithun	**ngou** (domestic, *bos frontalis*) ; **mŭghka ngou** (wild, *bos gaurus*)
Oak	**yampu**
Palm (*livistona*)	**lou**
Pandanus ("screw pine") ..	**wou**
Partridge	**aupi** (bamboo partridge), **auwat** (hill partridge)
Python	**pinyu-saume**
Quiver, *n.*	**lauchinkek** (basket), **lauchin-tung** (bamboo ; used for poisoned arrows)
Reach (arrive at, *vb.*) ..	**sŭgh-**
Swine (wild)	**meibam**

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Head-dress of the Hill-Tribes of Assam.[1]

By Provash Chandra Basu.

The following study is based on the collection of the Ethnographical Gallery of the Indian Museum. In describing the head-dresses of the hill-tribes of Assam, I have divided them into two main divisions. The first includes the Abor, Mishmi, Dafla and the Hill Miris, whereas the latter comprises the Nagas and the rest of the hill tribes of Assam. I have done so because these two divisions are not only separated from each other geographically but are strikingly different in type. The classification given below is based mainly on morphological grounds wherein are dealt not only with the main typological differences but with the technique and texture as well.

The materials used for the construction of the headgears are bamboo, cane, palm and plantain leaves which are abundant in Assam. The first two are used in-basket-work and the last two as the filling material in the basket-work. Bamboo and cane are used for the foundation as well as for the weaving element. They are generally made into fine strips and are then woven in various patterns.

The Classification.[2]

Group A.

Our first group consists of the Abor, Mishmi, Dafla and and Hill-Miri series. Here there are three kinds—the Caps, the Rain Shields and the Hats.

The Caps: The base of most of the caps is pyriform. There is no ring shaped cap in this region. Some caps are made of leather (*Mishmi 10, 11*), whereas others are made of cane. Of the latter sometimes the base is strengthened by canebands and in the rest there is a beak-like projection in front (*Hill Miri 1, 2, 3; Mishmi 8*).

The former can be classified as follows :—

(A) Of wrapped work.

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[1] Paper read before the Anthropological Section of the 15th Indian Science Congress, 1928.

[2] The numbers referred to (in italics) throughout the paper are those given to the specimens in the Ethnographic galleries of the Indian Museum.

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(*a*) Round topped and strengthened by cane bands on outer surface. Ornamented *Abor 6*, *Mishmi 7*. Not ornamented *Abor 7* (See Plate 1, Fig. 1).

(*b*) Strengthened by cane bands on outer surface. Flat topped and ornamented *Abor 3* Round topped and ornamented *Daphla 11*.

(B) Openwork of hexagonal type, top conical, outer surface quadrangular with one angle narrowed out. The space between the two basketworks being filled with leaves of dyed grass and plantain, *e.g.*, *Abor 5*.

The Rain Shields : In shape it is but a large edition of *Abor 5*, the interspace being filled with plantain and palm leaves, *e.g.*, *Abor 2*.

The Hats : They can be sub-divided into two divisions :—

(1) Base strengthened by caneband, flat topped, wrapped work, decorated with horn-bill head *e.g.*, *Abor 9*, *Mishmi 9*.

(2) Base not strengthened by cane band, wrapped work, *e.g.*, *Hill Miri 4*.

Group B.

Our next group consists of the Nagas and other hill-tribes of Assam. Following the usual classification we have the Hats, the Rain Shields and other types.

The Caps : These can be divided into the following divisions :—

(1) Ring shaped, *e.g.*, *Naga 100*, *101*, (See Plate 3, Fig. 1) *102*.

(2) Oval or circular base and conical top (Naga type). Of these some are covered with hide, and others are simply made of canework either twill (*Naga 2*, *3*, *4*, *5*, *6*, *7*, *9*, *17*, *18*, *19*, *20*, *21*, *23*, *24*, *25*, *28* vide Plate 1, Fig 2) or wickerwork (*Naga 8*).

(3) Oval or circular base, top not conical, *e.g.*, *Naga 27*, *1685*.

(4) Caps made of cloth, *e.g.*, *Khasi 10*, *10A*.

The Hats : Here we have two special types.

(1) *The Banpara Naga Hat*—It has three parts :—

(*a*) The socket has a rounded top and is of oblique twill over two and under two in rhythm.

(*b*) The basal ring is covered with bear's hair in front and cotton behind.

(*c*) The platform.

(2) *The New Gong Type*: The basketry is usually of fine strips of bamboo and rarely of cane. The

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platform is rather sloping and is strengthened on both the surfaces with hexagonal openwork in alternate rhythm. The interspace being filled with palm leaves. The individual hats differ only in minor details and decoration—the latter in some cases being of exquisite pattern.

New Gong (*7986, 7990, 7991, 7993, 7994*) *Assam* (*5791, 11010, 5078 Goalpara*). *Kamrup 2102* (*Cf. N.G. 7993*). *2101, 5144* (See Plate 3, Fig. 2).

RAIN SHIELDS: It can be divided under the following heads:—

1. *Umbrella-New Gong 7992.*
2. *Rain Cover.*

(*a*) Usual hexagonal openwork of fine caneslips on both the surfaces. The interspace being filled with palm leaves. The upper end is rounded—slightly below which there is a projection backwards.

I. The base is pyriform and the lower end pointed, *e.g.*, *Khasi 9A/ 2008; 22A.*

II. The lower end is more reduced than (a) *e.g.*, *Assam 1806, 1807.*

(*b*) The Cachar type: The lower end is straight and horizontal, the basketry is open checkerwork of straight type, the peripheral part being strengthened with bamboo bands There is an outward projection, a little below the upper end due to the change in the direction of the weaving elements. A little below it a few bamboo bands pass downwards. The interspace being filled with leaves, *e.g.*, *Cachar 5083.* (Vide Plate 2, Fig. 2 and 3.)

3. *Rain Shield for head only.*

(*a*) Base Oval—there are two eminences on the roof—one in front and another behind, where the roof meets the slopes in the anterior and posterior surfaces respectively. The basketry is coarse-checkered plaiting of bamboo strips. The margin is strengthened by bamboo and cane bands, *e.g.*, *Naga Hills 7250.*

(*b*) A circular hat. Basketry of the usual type—the same inner and outer hexagonal openworks of bamboo strips with only minor variations. These elements all cross in the centre where they present a beautiful radiating appearance. Near the periphery for about 3″ horizontal strips of

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bamboo are used as the weaving element. It is strengthened on the outer surface by three concentric bands of bamboo slips. So also on the inner aspect there are in addition to these, four bands of bamboo strips intersecting in the centre. Between the outer and inner basketwork are leaves of palm.

OTHER TYPES.

(1) Crescents: These are surmounted with feathers and spokes in a radiating manner. Sometimes they are made of pith surmounted with fine spokes of bamboo and decorated with dyed woollen threads, *e.g.*, *Naga 93-95.*

New Gong type:—An almost circular ring made of cane covered with hair placed on a board made of straight twill work of bamboo strips, over two and under two in rhythm and covered with blue cloth—over which it is decorated with strips of cloth dyed red and triangular pieces of paper arranged in rows. From this radiate four splinters of bamboo over which are placed horn-bill feathers, *e.g.*, *New Gong 1673.*

(2) Radiating spokes surmounted with hair fixed to a median stump.

(3) Turbans, *e.g.*, *Manipuri 16*, *Mikir 9*, *Garo 17*, *97.*

(4) Metallic helmets, *e.g.*, *Lukhipur 7988*, *Assam 5498.*

GENERAL DESCRIPTION, MORPHOLOGY TECHNIQUE AND TEXTURE :—

Group A.

From the above we find that the most common pattern of weaving among the Daphla, Hill Miri, Abor and Mishmi are the wrapped types. The foundation of this consists of stout cane bands and the weaving elements are fine cane slips. Wrapped work in the head gears is comparatively rare in the south—the only specimen that we have got from the latter region is a cane helmet (*Naga 1685*) from the Naga Hills. It is interesting to note that this specimen conforms more to the Abor and Mishmi type than to the usual Naga specimens. A special study of this type is important, because it may possibly throw some light on their affinities.

The wrapped work found in the Assam headgears is of two distinct types—in one case the adjacent weaving elements move in the same direction, whereas in the other case they move in the opposite directions. (See Plate 1, Fig. 3 and 6.)

In some cases, specially in the Indo-Tibetan region, the head gears are strengthened by strong bands of cane possibly to protect the head from the blows of the enemies and the base is generally pyriform in shape. (See Plate 1, Fig. 1.)

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Another type of basketry is the common hexagonal open-work of cross wrapped pattern with the wefts parallel to each other and passing over and under the same alternate warps as in *Abor 6*, (See Plate 1, Fig. 4).

It should be mentioned here that we have got very few specimens of conical caps in the Indo-Tibetan border. The usual type of roof in this region being flattened or rounded whereas the conical form is one of the characteristics of the Naga type.

It is interesting to note that *Abor 2* (a rain hat) has some affinities with the Khasi rain-shield. Thus it is more or less pyriform in shape with the centre slighty raised. The periphery is strengthened with splinters of bamboo. The dorsal surface is strengthened by a starshaped radiating figure having five arms—one arm of which extends to the pointed extremity. The basketwork is as in *Abor 5* ; the inter-space being filled with palm leaves.

The beaked cap is a special feature of this region.

The specimens of hat from this region is rather scanty (*Hill Miri 4*) in our collection.

Group B.

The usual type of cap among the Nagas is the conical type, the roof of which is occasionally rounded. The common type of basketry is plaited twill over two and under in rhythm, sometimes over three and and under three with rare occurrences of checker and wickerwork (*Naga 8*). We have got here a wealth of other types which have been mentioned under classification.

In some cases the cap presents midway between the base and the apex four knob-like projections—two in front and two behind placed on either side—due to the change in the direction of the cane work *Naga 2* (*3030*).

Among the Nagas we get a very characteristic type of twill work over three and under three in rythm, *e.g.*, *Naga 9* (*4914*) *Lhota* (See Plate 1, Fig. 5) and *Naga 4*(*10477*). Here the slips on the outer surface commence near the upper end and midway between the base and the apex they pass under cover of a row of slips which are arched in a semi-circular manner, under it in the rhythm described above and again emerging from under it near the lower border. At the lower part is a fine plaiting of cane which is kept in position by four longitudinal bands, two in the sagittal and two in the transverse diameters.

The usual Naga type of hat is already described in the classification.

Of the ring shaped caps *Naga 101* (*1632*), (Plate 3, Fig. 1) Banpara is an interesting type. This is made of cane

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bands, being lined inside with arecanut spathe. In front there are two rows of white seeds—one along the upper border and another along the lower. In the centre there is a band of fine checkerwork of cane slips—of which the vertical rows are dyed whereas the horizontal rows are not dyed at all and in the centre as well as on the sides it is also decorated with white beads. In the upper and lower rows the white beads are fastened with black fibres possibly of palm. This is a type also met with among the Garos among whom it is used as a ceremonial head-dress with the only difference that in the case of the latter there are fine cane slips in the centre instead of being woven in checkerwork are wounded in a spiral manner. Over the rows of white beads are added cock's and bhimraj feathers.

With the slow and gradual infiltration of the Hindu ideas a profound change has occurred in the head-dresses. Thus the Manipuris, the Mikirs, the Garos and the Khasis wear Turbans now-a-days. The Khasis also use caps made of cloth. Thus in *Khasi 10* we have a cap with no ear flaps and both surfaces being covered with white cloth. It is made of two halves sewn together in the median sagittal line—the rest of the sewing—all radiate from the median line. The interspace being filled with cotton. Again in *Khasi 10A.*, we have a blue cap with one ear flap on either side.

The next important type is the rain cover. It is more or less pyriform in shape, the upper end being rounded but gradually the lower end becomes reduced until it becomes perfectly straight and horizontal. The basketry is of usual hexagonal openwork and the interspace being filled with leaves. A variety of it being *Cachar 5083* (See Plate 2, Fig. 2 and 3)—(for description, see under classification)—a very interesting type. We find an exactly similar object being still in use among the Negritos of the Phillipine Islands (*Vide Manila Ethnographic Survey*, Vol. I, 1905, p. 122, Plates *XLIV* and *CXXXIV*).

The other interesting types are rain shields for head and body, rain shields for head only and circular hats. But the most important among all these is the characteristic New Gong type of hat. (For description see under classification). (See Plate 3, Fig. 2). It is found in New Gong, in Goalpara, in Kamrup, among the Shans of the Chin Hills (The living races of mankind p. 116—in the picture of a Shan beauty), among the Kachins (Vide picture of Kachin girl in p. 173. Shakespear's History of Upper Assam) and among the Karen Peoples of Burma (Vide picture in p. 83 of Karen Peoples of Burma by Marshall 1922—on the head of a woman transplanting paddy).

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Decoration.

The head-dresses betray a wealth of decoration. The decoration is undoubtedly simple, mostly confined to the articles that they can easily secure. Head-dress is one of the very few things that marks the individual's position in their tribal life. But with the infiltration of modern civilization much of those ancient characteristics have been smoothed down but there still exist sufficient fossilized relics of the past to throw a flood of light not only on those inherent tendencies of their culture but also on the past records of their cultural history. Thus we find that the horn-bill feathers occupy a very important place in the primitive culture of Assam. They are put over the spokes of bamboo or seeds as among the Nagas, the Garos, etc., and are of much significance in that warriors have a right to wear them after they have taken human heads. Those who have not done so wear silky feathers of Burmese domestic fowl or some imitation feathers. And later they are worn one for each successive head taken. This feature is found not only among the primitive tribes of the Indo-Tibetan region but it is looked also with a very great regard among the primitive peoples of Malay, Borneo and other regions. The horn-bill head and horn-bill feathers are much used by the primitive inhabitants of the Indo-Tibetan region as a decoration for their caps and helmets (*Abor 4, 8, Mishmi 7, etc.*) as well as among the peoples of Northern Borneo.

They make an enormous use of the boar's tusks placing them in different positions so that the types of decoration vary in different head gears (*Abor 3, 5, Naga 5, 7,* etc.). (See Plate 1, Fig. 6.)

In some cases the posterior ends of the boar's tusks are inserted into plaited works of cane. It is interesting to note here that the boar's tusks are looked upon with high regard among the peoples of North Borneo.

These people profusely use animal hair mainly of pigs, deer and bears in ornamentation. In some cases simple hair is used, in others it is dyed red or black and in some it is attached to skin (*Daphla 11, Abor 5,6, Naga 6, 23, etc.*). Sometimes the hair is fixed to a caneband so that its free end hangs freely in the air, in others it is fixed to a cane band curved so as to be crescentric in outline.

Among the Nagas sometimes fine strips of cane are taken from the upper end of cane slips. These hang down freely and as they are very light they move about freely with the breeze. (*Naga 6*). (See Plate 3, Fig. 3.)

Brass discs are greatly used by the Nagas. The disc is generally circular in shape with an aperture in the centre as in

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Naga 6. But in other cases semi circular discs with perforations and metallic pieces of various shapes are used (*Naga 2, 6, 17*). Brass studs are used among the Garos (*Garo 97*).

The Nagas greatly use the crescents of buffalo horn as a decoration to their head gears *Naga 6, 18* (See Plate 3, Fig. 3). These are generally tipped with hair. It is interesting to note that the methune horn forms a very important part in the Naga culture. We also find in the culture of the Phillipine Islanders—the two crescents in the forepart of the head as of the Nagas in the pictures of "Customs of the World" p. 655. Ifugao in N. Luzon in wedding dress, in Sawyers "Inhabitants of the Phillipines" (in the picture of Negrito) (Aeta) from Negros Island facing p. 207 also among the warlike Igorots as in the picture facing p. 254, of Igorot spearman and Negrito archer.

In some cases palm fibres are used in decorations. Thus in *Naga 3* (Banpara), a semicircular arch is placed on the right side of the top. The base of the arch is made of cane and from it radiate fine narrow needle-like projection possibly of palm fibres, at the free ends of which are tied small pieces of wool in some cases.

Feather occupies a very important place in decoration. The place of horn-bill feathers has already been noted—they are placed so loosely as to twirl in the wind. Sometimes they are fixed to central rachis. Thus in *Naga 3* many of the feathers are attached to the basket work in front and the rachis is made of twisted cane over which are fixed feathers by means of dark threads. The lower ones are small plumules, the upper ones being true feathers. In *Naga 4*, the tip of the crescent of buffalo horn is decorated with hair dyed red and black with feathers attached to it and a row of feathers is fixed to a cane-band in the posterior end. The method of fixing is peculiar. In the lowest part is a cane-band to which the lower ends of the plumules are bent on themselves.. Then in the intermediate portion they are fixed by two cane strips.

Shell, wool and cowrie occupy a very conspicuous part in decoration. The last one is usually fixed but the first two generally hang as pendants (*e.g.*, in *Naga 4*). In *Naga 93* coloured wool is used to keep the piths and the spokes of bamboo in position—some being attached radially, others concentrically. Dr. Hutton considers the conch-shells and the Cowries to be the relics of a waterborne culture (vide *The Assam and the Pacific* by J. H. Hutton, C.I.E., *Man in India*, Vol. IV, No. 1 and 2 p. 12).

The technique in weaving plays a no less important part in ornamentation as in *Naga 9* (Lhota). Sometimes all the cane-slips are dyed while one or two are not dyed or vice versa and it is by the combination of these elements that various patterns such as lozenges are produced; in other instances

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slips are secondarily introduced over the non-coloured ones giving rise to new designs.

Running triangles and lozenges of paper are generally pasted overboards either of the crescents or of the platforms of the hats. Seeds as mentioned before are occasionally disposed in various patterns.

In some cases the head-dresses are decorated with strips of black or red dye.

In those places where turbans are worn much decoration is found in needle work and the wearing of the cloth itself as in *Manipuri 16*.

With the contact of modern civilization many new elements have entered in their decoration. Thus in *Naga 4* coloured beads of glass, clothes of various patterns, silver braids, scrolls, triangles, etc. (*e.g.*, in *New Gong 7916*) are much used. Another profound change that has taken place in their culture is rather the decay of head hunting. Formerly human skulls were hung as a mark of bravery indicating the number of heads taken but this is now almost a dead letter.

In some places mica foils (*e.g.*, in *Assam 11010*, *New Gong 7993* etc.) and palm leaves cut into triangles and buttons and are used as decoration.

Conclusion.

To sum up,—the study of Indian head-dresses is of much anthropological interest and as such deserves a careful attention. Those of the Indo-Tibetan region are distinct from the rest. So also we find the usual Naga cap to be of a definitely distinct type. But there are features sufficient to indicate that the Abor and Mishmi groups have their cultural affinities with the inhabitants of the Naga Hills and other hill-tribes of Assam. Again it should be remembered that there are a few special types among the former which we find nowhere else in our collection, *e.g.*, the beaked caps.

The importance of horn-bill undoubtedly deserves notice. This we find common not only to the Abor and Mishmi region but also in the Malay Peninsula as well as among peoples of Northern Borneo. This possibly therefore is relic of a culture which these types of people have adopted from others or had in common with others.

A ring-shaped cap of cane lined on the inner surface with arecanut spathe and decorated with seeds fastened with black fibres of palm and with fine slips of cane is found to be common both among the Garos as well as among the Nagas. Added to this we might remark with Dr. Hutton that they have in common, "the erection of the Y shaped posts, the practice of reaping by hand," etc. (Introduction written by Dr. Hutton p. *XXXVI* of the Lhota Nagas by J. P. Mills, 1923).

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The New Gong type of hat is the hat *par excellence* of the Assam Hills and Valley. It has been found in Goalpara, in Kamrup, among the Shans of the Chin Hills, in Sibsagar and among some of the Ao Nagas and the Karen peoples of Burma.

The Cachar type of rain cover has its exact copy among the primitive inhabitants of Manila. Added to this the cult of the horn, the use of crescents on either side of the forehead, resembling the buffalo horns, tipped with hair or feathers are common both to the inhabitants of the Naga Hills as well as to the Aeta Negrito of the Negros island, the warlike Igorots and other inhabitants of the Phillipine Islands.

Thus we find that what is true of the Abor, Mishmi, Naga, the Garos and the Malay Tribes is also true of the Nagas, the Cacharis and the inhabitants of Luzon. The affinities of the Nagas with the inhabitants of the Phillipine Islands have already been suggested by Dr. Hutton (vide Introduction written by Dr. Hutton, p. *XXVI* to the Lhota Nagas by J. P. Mills), and a study of the head-dresses of the hill-tribes of Assam leads to the same conclusion.

My thanks are due to Lt.-Col. R. B. Seymour Sewell, Director and Dr. B. S. Guha of the Zoological Survey for permission to use the collection of the Ethnographical Section of the Indian Museum. The work has been carried on under the directions of the latter to whom my special obligations are due.

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EXPLANATIONS TO PLATES.

Plate 1.

Fig. 1. Abor Cane helmet.
Fig. 2. Common Naga twill plaiting.
Fig. 3. 2nd. type of wrapped weaving.
Fig. 4. Hexagonal pattern of weaving.
Fig. 5. Texture of $\frac{\text{Naga 9}}{4914}$ Lhota (Ind. Mus.).
Fig. 6. Abor helmet. Abor 3 (Ind. Museum).
Below is shown the usual type of wrapped weaving, both turns being taken in the same direction.

Plate 2.

Fig. 1. Texture of Naga 2 (Ind. Mus.), showing the abrupt change in the direction of weaving.
Fig. 2. Cachar type of Rain Cover.
Fig. 3. Technique of weaving in the Cachar type of Rain Cover.
Figs. 4 and 5. Decorations of feather. Those marked in cross are red.

Plate 3.

Fig. 1. Naga $\frac{\text{101 (1632)}}{\text{Banpara}}$ (Ind. Mus.) This type is also found among Garos.
Fig. 2. New Gong type of Rain Hat. Technique of weaving is hexagonal open work of alternate rhythm.
Fig. 3. $\frac{\text{Naga 6 (9281)}}{\text{Tangkul}}$ (Ind. Mus.) Note the crescents of buffalo horn tipped with hair.

Plate 4.

Fig. 1. Naga cap with crescents of buffalo horn on either side tipped with hair $\frac{\text{Naga 6 (9281)}}{\text{Tangkul}}$ (Ind. Mus.)
Fig. 2. A Naga cap $\frac{\text{Naga 9}}{4914}$ Lhota (Ind. Mus.). Note its peculiar texture.
Fig. 3. A Naga crescent worn on festive occasions Naga 93 (8825) (Ind. Mus).
Fig. 4. An Abor cap decorated with hair and boar's tusks Abor 3 (1092) (Ind. Mus.).

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PLATE. 5.

Fig. 1. A Naga crescent decorated with feather worn on festive occasions.

Fig. 2. A Hill Miri cap decorated with hair and skin. Hill Miri 4 (10907-1) (Ind. Mus.).

Fig. 3. A Naga ringshaped cap decorated with beads and cane work. This cap closely resembles the Garo 14 (Ind. Mus.) $\frac{\text{Naga101 (1632)}}{\text{Banpara}}$ (Ind. Mus.).

Fig. 4. A Mishmi helmet decorated with hornbill head. Mishmi 7 (1732) (Ind. Mus.).

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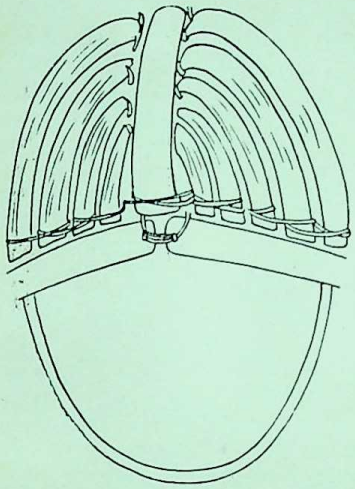
Abor 7 (Ind. Mus.).



Cane helmet.
Fig. 1.

Common Naga twill plaiting.

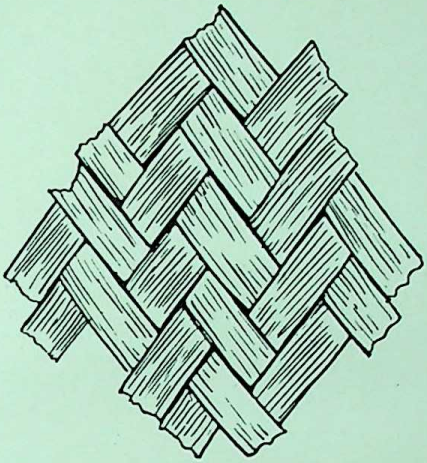
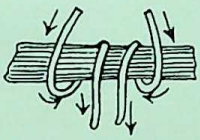
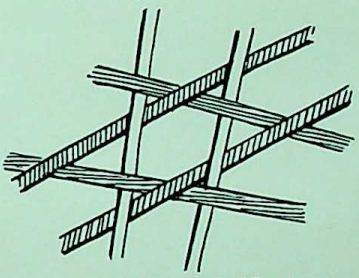


Fig. 2.
Hexagonal pattern of weaving.

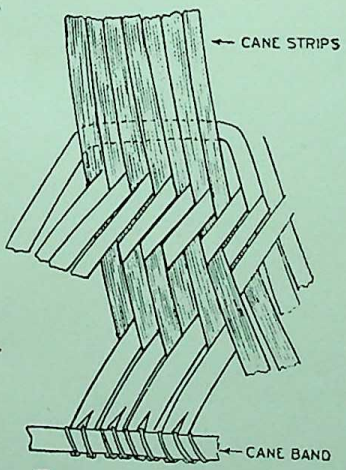
2nd type of wrapped weaving.



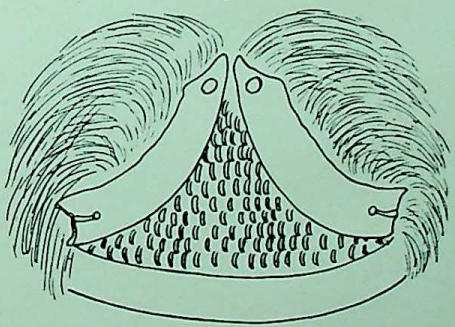
Turns in opposite direction.
Fig. 3.



No. 10903 (Ind. Mus.).
Fig. 4.

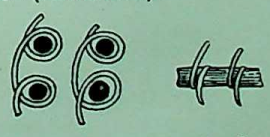


Texture of *Naga 9* Lhota.
No. 4914 (Ind. Mus.).
Fig. 5.



Abor 3 (Ind. Mus.).
No. 10902 (Ind. Mus.).

1st type of wrapped weaving.



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Both turns taken in the same direction.
Fig. 6.

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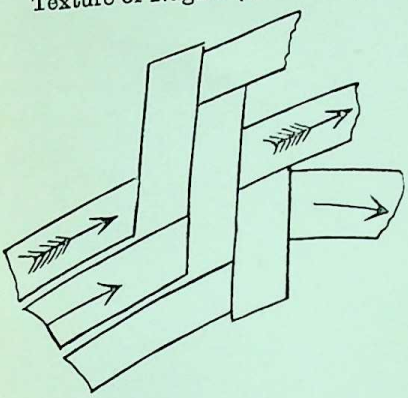
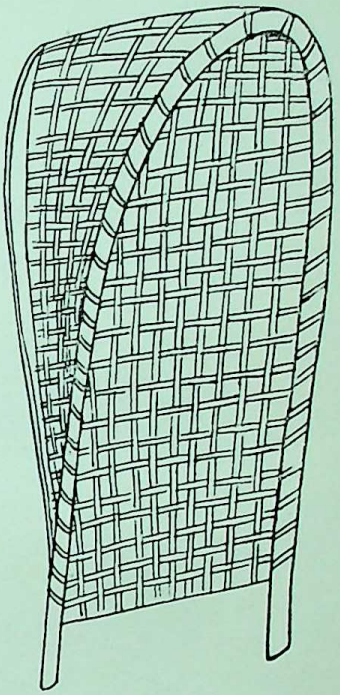
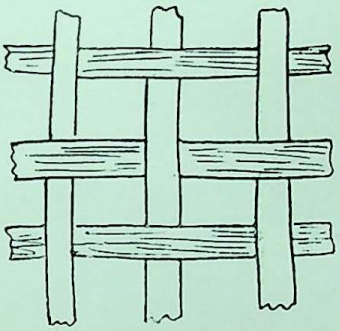
Texture of Naga 2 (Ind. Mus.).



Showing the abrupt change in the direction of weaving.
Fig. 1.



Cachar type of Rain Cover.
Fig. 2.



Technique of weaving.
Fig. 3.

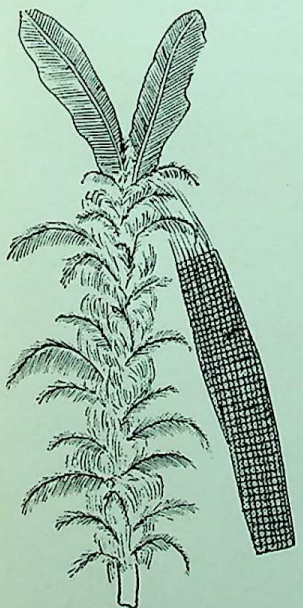


Fig 4.

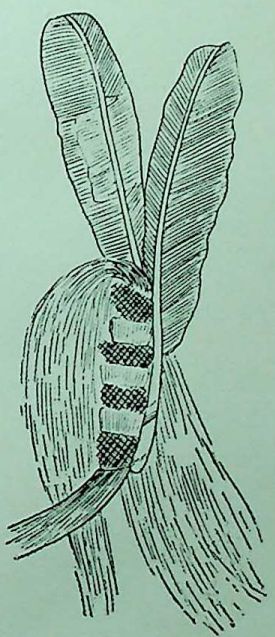


Fig. 5.

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Naga 101 (1632) (Ind. Mus.).
(Banpara).

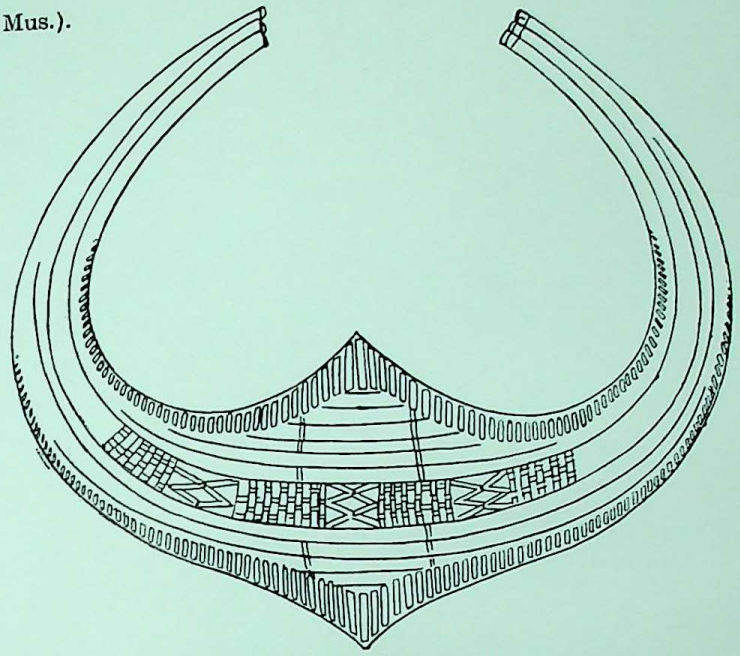
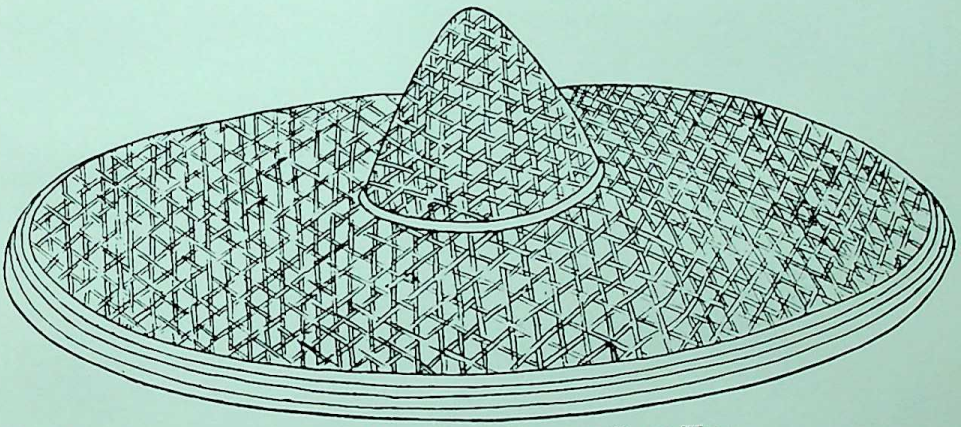


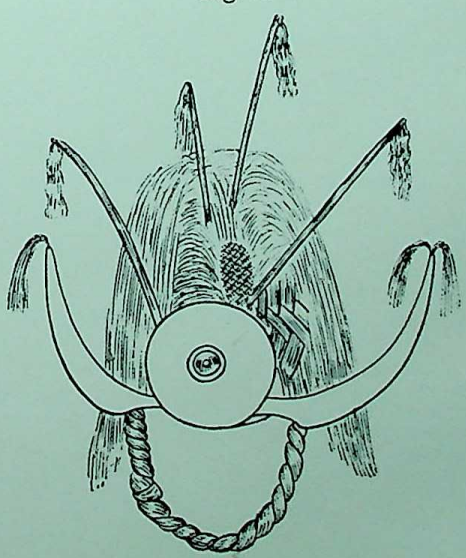
Fig. 1.



Technique of weaving is hexagonal open work of alternate rhythm.

NEW GONG TYPE OF RAIN HAT.

Fig. 2.



Naga 6 (9281)
Tangkul.
(Ind. Mus.).
Fig. 3.

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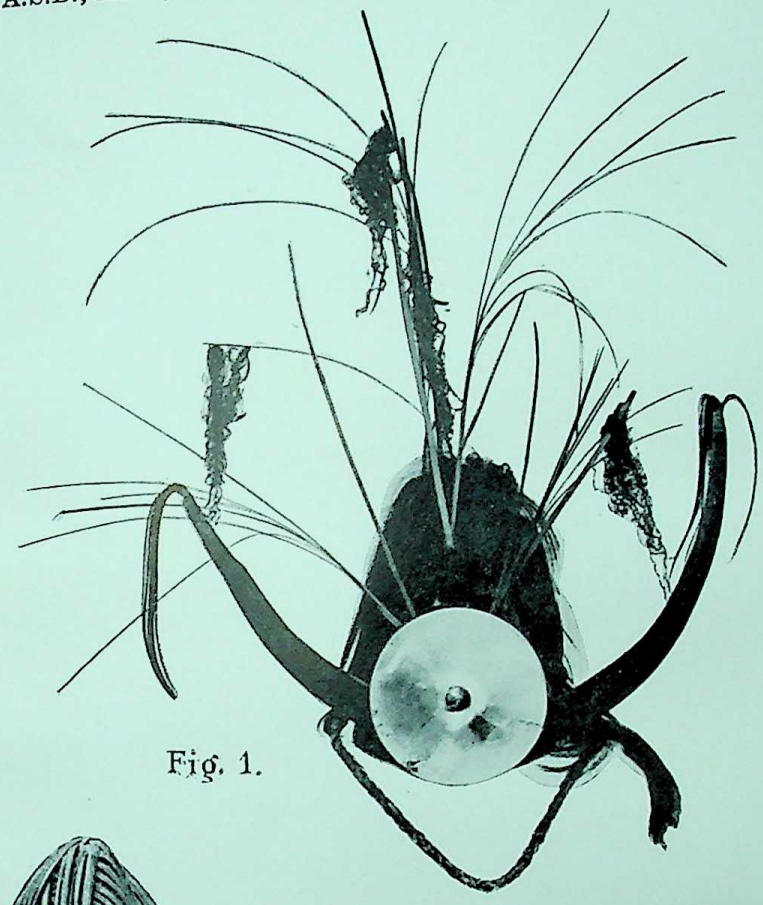

Fig. 1.

Fig. 2.

Fig. 4.

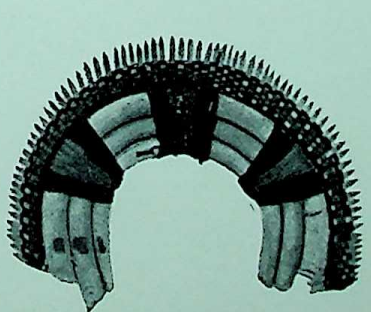

Fig. 3.

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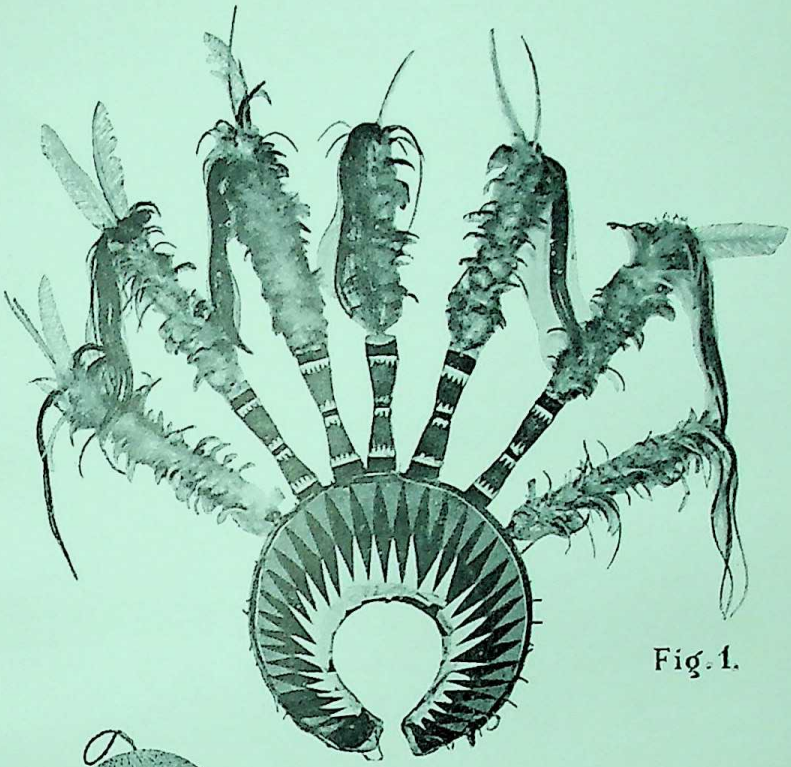

Fig. 1.

Fig. 2.

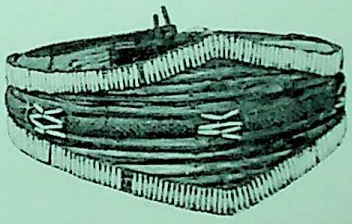

Fig. 3

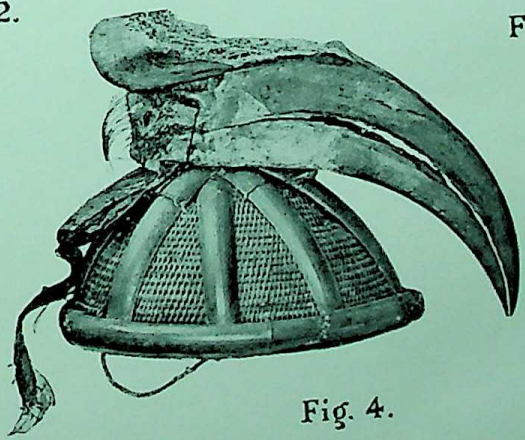

Fig. 4.

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Originals and Parallels of Some Santal Folk Tales.

By Kalipada Mitra.

1. Folklore of the Santal Parganas by C. H. Bompas. (David Nutt, 1909.)

Lita and his Animals (pp. 87–97).

The youngest son, Lita, got from his father Rs. 60 to trade. The villagers were chasing a cat which stole milk from the house of the Raja. He purchased the cat for Rs. 20. Then he bought an otter, a rat, and a snake. The snake took him home and advised him to get from his father *a ring* which when placed in a seer of milk would produce anything whatever desired. He married a girl for whom with the help of the ring he made (for this was the condition) an underground passage between his and her father's house. Now Lita's wife had a paramour. She extracted the secret from her husband; and at night she drew off the ring from Lita's finger, and eloped with her paramour. Before they departed they killed a goat and sprinkled its blood on the floor. On the following morning, Lita was suspected to have murdered his wife, and was taken into custody. The animals came to Lita in prison and on his advice went out in quest of the missing ring. They reached a palace shining like gold on the other side of the Ganges. With the help of the otter they reached the palace. The rat bored a hole into the wall. Then *he climbed on to her chest (while she was fast asleep by the side of her parmour) and tickled her nose with the tip of his tail; this made her sneeze and behold! she sneezed out the ring which she had hidden in her mouth.* The rat ran off with it. While crossing the stream he was pounced upon by a kite and dropped the ring into the water. It was subsequently discovered by the otter to be lodged in the stomach of a fish which was hauled up. But a kite took the fish off which was subsequently recovered from some women (who snatched it from the kite) by the cat. The ring was then taken out and delivered to Lita in prison. The ring, commanded by Lita, transported the bed on which the guilty pair were sleeping to the presence of the magistrate who convinced of Lita's innocence released him from the prison.

Cf. also story No. XXXIII. Ramai and his Animals, pp. 129–131.

The youngest son bought a cat, a dog, an otter and a young black snake. The snake advised him to take nothing

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from his father except a ring on his hand. "It is a magic ring and has the property that it will give you whatever you ask." He got from it a luncheon and then a gold palace.

A.—(*Parallel*). Folk Tales of Kashmir by the Rev. J. Hinton Knowles (London, Trübner & Co., 1888).

The charmed Ring.

A merchant gave his son Rs. 300 to trade. Apparently a fool he purchased a dog (for Rs. 100) whom some herdsmen were about to kill, and then a cat and a snake (who were likewise in the peril of their lives) for the remaining Rs. 200. His father angrily turned him out to the stables. The snake led him to his palace in a spring where he advised him to get from the snake-father, Indrasharāja, *a charmed ring* on speaking to which a beautiful furnished mansion and a charming lovely woman would be provided for him. He got also a *pot* and a *spoon* which would supply him with all manner of rarest and most delicious foods.

All this happened and he lived most happily with the woman for several years, 'until one morning the woman while arranging her toilet put the loose hairs into a hollow bit of reed and threw it into the river.' This was caught by a prince who ceased eating and drinking, and was pining away for the girl. His aunt—an ogress—became a bee and finding the girl out, got the ring and carried it to the Prince. He spoke to the ring and the mansion and the girl appeared before him. He wanted her to marry him. She prayed for a month's respite. Meanwhile the cat assured the merchant's son that he would find out the ring for him. He went to the palace, saw the lady unobserved and learnt from her that the ring was in the stomach of the ogress. As there was a marriage procession of the rats he pounced upon the rat bridegroom and promised to release him only if the rats gave him the ring. At midnight when the ogress was sound asleep, one of the rats climbed upon her face and inserted its tail into her throat, whereupon the ogress coughed and urged violently, so that the ring came out and rolled on the floor. The cat got it, mounted on the back of the dog and crossed the stream. The dog took it and dropped it into the water. A fish swallowed it. A cormorant caught the fish from which the ring was recovered. It was carried off again by a kite and ultimately restored to its owner.

B.—(*Parallel*). Tales of the Punjab by Mrs. Flora A. Steel.

The wonderful Ring.

The youngest prince purchases, each for a golden sovereign a cat, a dog, a parrot, and a snake. The snake-father, in

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gratitude, gave him a *ring* which when sprinkled with butter-milk produced whatever was wished. He got delicious dishes from it, and with its help built a palace in the middle of the sea, and married a princess, who became golden by its virtue. She combed out some hairs which she let float down the stream. A prince caught them, and sent a wise woman in quest of the princess. She persuaded the princess to get the ring from her husband and brought her to the love sick prince, after having taken the ring from her. The spendthrift Prince's cat got hold of a rat and made it thrust its tail up the nose of the wise woman as she lay snoring with the ring in her mouth. As she sneezed the ring flew out of the mouth on the floor and was picked up by the parrot who brought it to the Prince. He got back his wife.

C.—(*Parallel*). Folk Tales of Orissa by U. Datta Gupta.

Story of Ambujamani.

The eldest son of a Merchant buys a parrot, a mongoose, an *Odha* 'water-cat' and a snake. The mother of the snake, the Nāga-rānī, gives him the magic gem *Ambujamani* which gives everything desired. A Raja through the agency of his daughter gets the gem; and it is recovered in the same way as in the Kashmiri and the Santali tale; the snake thrust his thin and tiny tail into the Raja's nostril and he coughed out the gem.

D.—(*Parallel*). Indian Folk Tales by G. Misra.

The Pearl.

The same account of beasts purchased and thus saved from molestation. The mongoose picks up the ring, after it was recovered by the same old trick of the snake inserting its tail into the nose of the ogre which causes the ejaculation of the ring. The cat swam across the river, the snake rode upon it, and upon the latter the mongoose, while the parrot was flying overhead. The pearl drops into the water, whereupon the cat wishes the fish to find it out. It was found on a serpent. The parrot asks Garuda's help to recover the ring which is ultimately restored to its owner.

E.—(*Parallel*). Fairy Tales from Many Lands.

(Gresham Publishing Co.)

The Magic Ring.

(*P. 105*). *Here the rat got the ring. Cf. also the Gold-haired Princess in the stories above.*

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F.—(*Other Parallels*).

Cf. Grimm's "*the Grateful Beasts*"; *the Saccaṃkira Jāt* (73), the *Babbu Jāt* (No. 137), the grateful Elephant (Jat No. 156), and the Vultures (No. 164) are not close parallels, but are only examples of gratefulness of animals. Cf. also *Ārāmaśobhā and the greateful snake* in the *Kathākośa* (Tawney, trsln. 85ff.); Kaden, *Unter den olivenbäumen* ("Lichtmess") "Rasavāhini; Jambudīpa" in the *Orientalist* (Nov. 1884); see Penzer "Ocean of story" Vol. I, p. 101; Vol. V. p. 157, also Burlingame's Colln. of Jat. tales. *Cf. The Feast of Fists in Orient Pearls.*

For the magical article—the charmed ring, see *Cinq cents*, story No. 199 (jarre magique, t. II pp. 74-75); *Dadhivāhana Jātaka* (No. 186, razor-axe, drum, milk bowl, the wildboar's gem), *Bhadraghaṭa-Jāt* (No. 291)—the wishing cup, the story of Putraka in Somadeva's *Kathāsaritsāgara*; the skt. story of a śaṅkha which gave dināṛs every day; *Daśakumārcarita* ch. ii; the magic couch in the story of the Farmer and Moneylender in *Tales of the Punjab*; Fortune and Misfortune in *Orient Pearls* (Shovona Devi); also pp. 76, 77; Day's *Folk Tales of Bengal*, story of the Indigent Brahman, of the Bald Wife; *Folk-tales of Kashmir*, 'Saiyid and Said' (Bhadrapith, thāl, box of collyrium and ragged garment); *Old Deccan Days*, p.174; *Wide-awake stories*, 199, 216; *Madanakamarajanakadai*, pp 132-134; and for other Eastern and Western Parallels see "Magical Articles" *Motif* in Mr. Penzer's "*Ocean of Story*" Vol. I, pp. 25-29 and Vol. V. p. 3. For the magic iron rod, the guitar, the cap (making invisible the wearer), transporting wooden slippers, see Folk tales of Hindusthan—Seven Princes.

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2. Folklore of the Santal Parganas.

X. *The Girl who found Helpers*, pp. 42-46.

There was one unmarried sister who had seven brothers all married. The brothers went to far off country for trading. Their seven wives tormented the sister. For instance, she had to bring water in a pot full of holes. The frogs pitied her case and sat on the holes, so she was able to bring water. She was sent to fetch leaves, but no rope was given to her. A *buka sobo* snake pitying her served as a coil. A python coiled round a bunde of sticks which she gatherd. The wicked wives then took her to the jungle, put her on a tree, bound thorns round it, and left her there to shift for herself. The brothers returned through the jungle, found her on the tree, took her home, and punished their wives.

In another version Hira the sister was asked to pick up a basketful of mustard seed sown by the wives grain by grain.

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The pigeons did it for her. They asked her to bring bear's hair and then tiger's milk. The cubs of the bear and the tiger helped her in giving what she wanted.

A.—(*Parallel*). The Orient Pearls by Shovona Devi (MacMillan & Co).

The Wages of Sin.

Bija was asked by her seven sisters-in-law to fetch water from a well, but no rope was given to her for drawing water. The crows brought the water in their beaks and filled the bucket for her. She was then asked to separate the husk from the grain of a quantity of unhusked paddy without the help of mortar and pestle. The finches did the job for her. She was then sent to the dense jungle to fetch Ākanda plant (*Asclepias gigantica*) for them hoping she would be devoured by wild animals. She was found there by her brothers who were returning. The wicked wives were caught in their own snare, applied the milk of the Ākanda to their eyes (which they pretended they nearly wept out for their husbands) and got blind.

B.—(*Other Parallels.*)

In the Santali tale we read; "So one day they gave her a pot full of holes and told her to bring it back full of water." We are reminded of the similar task given to Śree Rādhikā in the episode known as her *Mānabhañjana.*

This is really a *task motif* occurring largely in fiction. Cf. Psyche in the *Golden Ass* of Apuleius Lib. cap. X; Grimm's Märchen, Nos. 62, 186, and 193; *Svend's Exploits* in Thorpe's *Yule-tide stories*; No. 83 of *Sicilianische Märchen*, and Stoke's *Indian Fairy Tales* (tale No. 22). Cf. also the story of Tapai in the *Khudrukuni* or *Bhālukuni Osa* of Orissa.

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3. Folklore of the Santal Parganas.

XXVIII. *The Wife who would not be beaten.*

A Raja's son would marry only that woman who suffered herself to be beaten every morning and evening. With much difficulty a princess agreeing to the condition could be found. One day when the Prince started to beat his wife, she asked him to desist till he earned and made a position for himself. So he set out on trading and reached the Lutia country. When the prince failed to answer a question rightly, the Raja of Lutia seized all his merchandise and left him penniless. He now

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served with a man and wore a loin cloth like the poorest labourer. He discarded an old loin cloth which was brought by his servant to the princess who put it away. She now went out and answered the question of the Raja rightly. She had a mouse and a shawl with her. The Raja promised that if the cat which he produced should jump towards any body the merchandise would be his. The cat seeing the mouse peeping out of the shawl of the princess jumped towards her. She, therefore, won and released her husband. After a few days her husband came home and went to beat her. She showed him the loin cloth and proved that in fact he was her slave, whereupon he gave up the idea of beating her.

A.—(*Parallel*). Folk Tales of Kashmir.

All for a Pamsa.

A merchant's son married an ironsmith's daughter on condition that he would beat his wife with shoe seven times a day. She persuaded her husband not to beat her on the first night and then for the first week and went to her father's house. She said she would gladly suffer herself to be beaten when he earned something for himself. The merchant's son went out trading and came to a garden where a lovely woman played *nard* with him and used the cat trick to extinguish the lamp when she was losing. He lost every thing and was put in prison. The wife now put on a disguise and went to the gambler's country. She learnt the secret of success from the woman's servants and put a mouse in her pocket. The cat went out after the mouse and did not brush the lamp aside. The wicked woman lost the game, surrendered herself to her lovely winner, and restored the merchant's son and his merchandise to her. The foolish husband did not know who rescued him. On his return home he proceeded to beat his wife, when she showed him his ragged clothes he put on as a prisoner and which she carefully put away in a box. He had to admit his defeat and gave up the idea of beating her.

B.—(*Parallel*). The Orient Pearls.

The foolish Vow.

A prince said: "Whoever shall wed me must submit to be beaten five times with a shoe, the first thing every morning." A princess married him on that condition, and made him put off the beating, saying: "A husband unable to support his wife has no right to exercise his power over her." The prince set out trading and was cheated in succession by two swindlers, each wanting a leg, and an eye, till he was robbed outright by a woman who falsely accused him of theft of a silver key and

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which he could not rebut. He now became the slave of an oilmonger. His wife now dressed herself up as a Prince, dealt rightly with the swindlers, defeated the wiles of the woman, recovered all her husband's merchandise from her, ransomed her husband and got a written agreement from the oilmonger transferring to herself his ownership of her husband. The Prince in gratitude gave her his ring as a souvenir. When he returned home he proceeded to beat her when she proved that he was her slave and had therefore no right to beat her.

C.—(*Parallel*). Folk Tales of Orissa.

The story of Maunavatī.

Cf. The story of Maunavatī *in Folk Tales of Orissa.* The Prince would not marry unless a girl were found who could bear ten blows at his hands. A princess married him on that condition, and agreed to be beaten provided he could make Maunavatī speak. He set out, but being unsuccessful was put in prison. His wife taking the guise of a young man set out, made Maunavatī speak, released her husband and ultimately cried shame on her husband when he essayed to beat her.

D.—(*Parallel*). Romantic Tales from the Punjab by Charles Swynnerton (Vol. I of a New Re-issue. Oxford University Press, 1928).

The Prince and his Vizier (pp. 265 ff.).

A man told his father that he could marry a woman who would allow him every morning to strike her five times with a shoe. A girl consenting to that condition was found and married to him. When he wanted a satisfaction of the stipulation the wife put him off from day to day till one day she broke out: "What right have you to beat me at all, since you do not contribute a farthing to my maintenance?" and she adjured him to earn the right to beat her by earning wages. So he sailed on and by and by came to a garden. He ate a mango and threw the stone away from which instantly sprang a tree laden with mangoes which ripened before his eyes. He took a mango with him wishing to work wonders with it and thereby grow rich. He made a wager that if he could grow instantly a tree with ripe fruits on it people would have to give him four thousand rupees, if he failed he would lose the stake. He lost the wager and was deprived of his money and merchandise. Then he supported himself by cutting grass and selling it. His wife dressed herself as a man, turned a merchant, came to the garden, ate the ripe fruit, made the selfsame bet with the same people, and gained it, for she took some of the garden earth in which she planted the stone of the mango. She

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met her husband who did not recognise her and offered him service, taking care to take from him his old clothes, his net and his sickle. She returned to her home. On coming back when the man wanted to have his five blows, the wife produced the mementos of his degradation as a grass cutter, and the man was covered with confusion, returned to his father's house and remained in the dumps for days.

E.—(*Other Parallels*).

Wide-awake stories, pp. 277–279; 427.

The use of the cat and the rat or mouse as a trick for dishonestly gaining a wager is a familiar motif in fiction. In our younger days we heard many such stories.

In the Rasālu Legend in Swynnerton's *Romantic Tales of the Panjab* we read (pp. 157–158) "....Raja Sirikup will then play *chauput* with you, and his wife and daughters will sit before you to divert your eyes, and in the meantime you will lose the game, and Sirikup will win it, after which he will cut off your head. But if he cannot prevail over you in that way, he will call forth his rats, Hurbuns and Hurbunsi, who are kept for that very purpose, and who will come and take away the wick out of the lamp, and there will be confusion, and Sirikup will make you the loser...." Rasālu bought a cat from a weaver and played the game with Sirikup. The cat swallowed up the male rat Hurbans; the female rat did not come and Rasālu won the game.

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4. Folklore of the Santal Parganas.

XXVII.—*The Flycatchers' Egg.*

A herd boy got a flycatchers' egg which his mother kept in a shelf and forgot all about it. From the egg came out a *bonga* girl and ate up the food of the boy daily, but she would cook rice and *dāl*, eat up a portion, comb her hair and go back to the egg. The boy one day watched and surprised the girl. He took her to wife, and lived happily of course.

LXXV.—*The Caterpillar Boy.*

LXXXV.—*The Dog-bride.*

A.—(*Other Parallels*).

Examples of the "Husk myth." See introduction to Schiefner and Ralston's *Tibetan Tales*, pp. XXXVIII ff.

Cf. De's *Folk Tales of Bengal*, first part of the story *Swet Basanta* (pp. 93–96).

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A merchant's son got a *toontooni's* (a small bird) egg, and put it in the almirah. The egg burst and out came a beautiful girl. She grew and daily helped her to a portion of the food served for the merchant's son. He hid himself; secretly watched, surprised the "beautiful damsel of sweet sixteen" as she stepped out and of course married her.

Cf. the story of *The Prince and Pān Shāhzādi* (No. 60) in the *Folk tales from Northern India* in *Indian Antiq.*, Vol. LIV, p. 33. The prince brought a *pān* leaf which he saw floating on the river, and placed it on a shelf in his room. Every night a princess came out of the leaf, and ate his food. He secretly watched, seized her and made her live with him as his wife.

Cf. the story of *A flower nymph* (No. 28, Ho Folklore, JBORS, Vol. IV, pp. 338–339). Cf. Shaharzadi Monkey Peri in the *Seven Princes* in Shaik Chili's *Folk Tales of Hindustan.*

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5. Folklore of the Santal Parganas.

XIV.—*The Prince who acquired Wisdom.*

The prince travelled to get wisdom. He got for three gold pieces three maxims and one extra free of charge from a ploughman. They were (1) "whenever you go to visit a friend or one of your subjects and they offer you a bedstead, or stool or mat to sit on, do not sit down at once but move the stool, or mat a little to one side;" (2) "whenever you go to bathe, do not bathe at the common bathing place, but at a place by yourself;" (3) "when men come to you for advice or to have a dispute decided, listen to what the majority of those present say, and do not follow your own fancy;" and (4) "Restrain your anger, if anything you see or hear makes you angry, still do not at once take action; hear the explanation and weigh it well, then if you find cause you can give rein to your anger and if not, let the offender off." All these maxims proved well to the Prince.

A.—(*Other Parallels*).

All these maxims will be recognised to be familiar to the Bengalis who have any recollection of nursery tales heard in youth.

Cf. the story of "Jangal Nagari" in Shaikh Chili's Folk Tales of Hindusthan.

Cf. the story of "Wisdom Seller" in Folk Tales of Sind and Guzarat (1925) by C. A. Kincaid.

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6. Folklore of the Santal Parganas.

XVI.—*The Miser's Servant*, pp. 60–63.

XXX.—*The Raja's son and the Merchant's son*, pp. 123–127.

LXXXVI.—*Wealth or Wisdom*, pp. 256–262.

A miser made his servants work for nothing, and gave them very little to eat. Kora wanted to teach him a lesson, and agreed to work on these conditions—one leaf full of rice three times a day; one grain of rice once a year and lowland to plant all the seed from it; similarly one seed of maize and upland to sow all the seed from it. If he leaves, his little finger may be cut off, if his master does not give him the wages, his little finger will be cut off. He brought a plaintain leaf to receive his food; and gradually used up all the lowland and the upland in a few years.

The Raja's son and the Merchant's son served on wages amounting to as much rice each day as would go on a leaf; if they threw up work they would forfeit a hand and an ear, which would also be the penalty with their masters if they discharged them so long as they wanted to work. The foolish Raja's son died. The merchant's son who called himself Ujar ate from a lotus leaf and not tamarind leaf, and was asked to hoe the sugar-cane which he dug up all. The master was angry but Ujar said he obeyed his master's order faithfully; his master did not ask him to hoe the ground. Similarly, pretending not to understand he chopped up to bits the hemp he was asked to scrape. When his master asked him to give his son a good washing in the tank, he, following the washerman's fashion, knocked out the poor child's brains. When his master to get rid of him gave him a letter to carry to his father-in-law asking him to kill the bearer directly, he made some changes in the letter with the result that he was married to the youngest daughter of his. Ultimately he killed his master.

The merchant's son stopped the hole in the leaking trough with clay and filled it to the brim, took out the vicious bullock to graze and tethered it to the tree, then killed it with the axe and threw the carcase in the ravine; pretended that the sickle had fever (as it lay in the sun) and therefore could not reap the rice; asked to start a fire in the big house and boil some water, he set the house on fire. The poor master could not dismiss him, according to the contract, so long as the servant kept to its terms; if he did so, he would have to lose his little finger. He therefore gave him a letter to carry to his father-in-law who was asked to kill the bearer directly. Ujar made an alteration in the letter and got his daughter to wife. The master for fear of losing his finger left his house for good.

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A.—(*Parallel*). THE ORIENT PEARLS.

A Nose for Nose (pp. 101 ff.).

A miserly couple used to engage one servant between them on this condition: "If thou leavest our service on any account, thou shalt give thy nose to us; on the other hand if we ever dismiss thee, thou shalt have our noses." The younger brother of a boy who lost his nose came and accepted service and worked hard till he devised a plan to be revenged on the couple. He would steal into the pantry and help himself to all the bread, butter and cakes. Asked to bring some mutton for them, he slaughtered all their sheep, and when rebuked, replied with mock humility that he had obeyed the order and brought the mutton; he was not asked to go to the market for it. When asked to quiet their boy who was crying, he strangled him to death and made him as quiet as the grave. They now wanted to flee from the boy and in a wooden trunk was put some refreshment. The boy in advance got into the trunk and enjoyed a free ride on the head of the master. When the latter in the middle of the way opened the lid to get some refreshment, out sprang the boy like a ghost and surprised them. They planned to drown him in the well, but he so managed affairs that the man pushed his wife into the well. He ran to his master's father-in-law and said that he had suddenly gone raving mad. As the poor master came to his father-in-law's place two stalwart men held him down and applied lashes to him (thanks to the mischievous urchin of a servant). Maddened by the pain he cried out "Come and take my nose, and begone thou rascal!" This he did, and exacted "a nose for a nose."

B.—(*Other Parallels*).

Cf. The story of the Cruel Merchant in the *Folk Tales of Kashmir*. Cf. the unpublished Bengali story of Ghughu and Phānd, the stupid and the clever brother, whence the proverb —ঘুঘু দেখেছো ফাঁদ দেখনি (Gughu dekhecho, Phānd dekhoni; you have seen Ghughu but not Phand). *Cf.* the Ho tale No. 19, in the *Folklore of the Kolhans—the Prince who became the king of the jackals.*

Cf. the story of "Sheikh Chihli (Chehlu)" in Hindi to be had in all the bazars, e.g., in Patna, which closely follows the story of "A Nose for Nose."

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7. FOLKLORE OF THE SANTAL PARGANAS.

XXXVIII.—*Chote and Mote.*

They were two brothers, poor but industrious. Chote served an oilman whose bullock fattened on oilcake, kept run-

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ning after herds of cattle, and tired him out. Mote served a potter who overworked him and abused him in the bargain. Both wanted to exchange places and as an inducement began to extol their respective position. Actual work disillusioned both. Chote luckily found some money at the foot of a custard apple in the potter's house and both decamped with the money.

A.—(*Other Parallels*).

Story No. XI. *The Adventures of two Thieves* in the Folk Tales of Bengal.

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8. Folklore of the Santal Parganas.

XXXIX.—*The Daydreamer.*

A Santal was carrying for wages of two annas a flat basket containing oilpots. He mused in this train—with one anna he would get chickens, and with profits from the sale he would purchase goats, then some cows, then buffaloes, then he would marry and have children. The latter would say "Father, wash hands for your dinner." He shook his head, saying, "No, no, not yet" and the oil pots fell and were smashed. When the oilman complained of his loss the Santal explained he lost much more, *viz.*, his goats, buffaloes, wife and children, whereas the oilman lost oil only.

A.—(*Other Parallels*).

Cf. the *Pañcatantra*. The story of the Brahman who built air-castles (Edgerton *Pañcatantra Reconstructed*, pp. 398 ff.). Alnaschar building castles in the air.

Cf. the Hindi book of story of Shaikh Chuhli (Chilli).—A very close parallel. Cf. La Fontaine's *Contes* the story of the milkmaid, showing migration of the *Pañcatantra* tale to the west.

Cf. *Dhpd. Commy.* Cittavaga III. 4. *Nephew Saṅgharakṣita*, also *Tantrākhyāyikā* VI.

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9. Folklore of the Santal Parganas.

XL.—*The Extortionate Sentry.*

A.—(*Parallel*).

Cf. the familiar story of a fisherman bargaining with a sentry who demanded half the price of the fish as tip for

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giving him entrance. He fixed a hundred stripes for the fish, so that the dishonest sentry might get fifty stripes for his desert.

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10. Folklore of the Santal Parganas.

XLII.—*A story told by a Hindu.*

Two sons of a Raja divided the kingdom between them. The elder brother gambled away to his younger brother everything, and ultimately his share of the kingdom. In shame the elder prince quitted his country accompanied by his wife, wandered about in the jungle without food, and was thoroughly spent. He asked his wife to return, but she would not hear of it. He could not bear to see his wife suffer thus and at night he deserted her. Some divine being taking compassion on her, appeared to her in human guise and led her safely out of the wood. She begged her way to a Raja's palace where she was engaged as a servant. By and by her husband, not getting more than a day or two's work as a labourer elsewhere, came to the Raja's palace and served as a groom in the palace stable. At length the wife recognised her husband and told her story to the Raja who asked all the syces to cook rice, and bring it to him. The wife, tasting the cooked rice, told which was her husband's cooking. The prince had to admit, was united with his wife and was ultimately given back his share of the kingdom.

A.—(*Parallel*).

The story of Nala and Damayantī is exactly its original.

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11. Folklore of the Santal Parganas.

XLIII. *The Raibar and the Leopard.*

A matchmaker finding a leopard in the jungle was frightened out of his wits which however he collected and he promised to find a bride for him by an artifice viz. the leopard was to get into a sack. After heavily cudgelling him, to death as he supposed, he threw the sack with the leopard inside into a river. It floated down the stream and was hauled up by a love lorn leopardess. They married and both thanked the matchmaker for his troubles and richly rewarded him.

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A.—(*Parallel*).

The Bengali story (unpublished I think) of the matchmaker getting a bride for the tiger must be its original. The familiar phrase *adhivāse ṭikle haya* (অধিবাসে টিকলে হয়) has been derived from this story.

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12. Folklore of the Santal Parganas.

XLIV. *The Ungrateful Snake.*

(*a*) A Raja's son was married in infancy, but did not know of it. One day riding past a tank he was informed by an old woman that he was married while an infant. He was determined to go off at once to his father-in-law's and see his wife. On the way he saw a field of thatching grass on fire, and in the middle, surrounded by the flames, was a huge poisonous snake, unable to escape. The latter offered a boon to the prince if he rescued him. Being assured that the snake would not devour him when saved, the prince rescued him. Once safe the ungrateful snake proposed to eat the prince up.

(*b*) Despairing of his life the prince begged the snake to allow two or three judges to decide whether it was fair that he should be eaten up by the snake to whom he gave life. The first judge was a banyan tree which decided against the prince, saying that it was only fair that the benefactor prince should be killed: "this is the justice we have learnt from human beings; you enjoy the shade of us trees and in return you lop off our branches, and do us all manner of injury, it is right that the snake should eat you." The second and third judges were a cow and water which complained of illtreatment by men to them,—*e.g.* driving away the calves, taking milk and giving hard work in one case, and dirtying the water in the other.

(*c*) The snake let the prince go his way and see his bride on his promising to return to him to be devoured.

(*d*) The prince was received with honour at his father-in-law's but was disconsolate. Urged by his wife he told the whole story to her. The prince returned accompanied by his wife to the snake. Though asked to go back to her father's house, the wife clung to him and offered herself to be eaten by the snake so that her husband might be spared; for if he was eaten she would have no one to support her. The snake promised to teach her an incantation by which she could support herself, and instructed her, "if she took some dust in her hand and repeated the incantation and then blew on the dust, any person on whom she sprinkled it would be burnt to ashes." She also learnt from him how to restore the people to life. She now cleverly used the trick and threw the enchanted dust over the snake which was burnt to ashes.

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A.—(*Parallel*). ROMANTIC TALES FROM THE PUNJAB BY SWYNNERTON.

The young Bridegroom and the Serpent.

(*a*) The son of a farmer proceeding to his father-in-law's saw in a lonely jungle a snake of enormous dimensions in deadly combat with a mongoose from whom he saved him. The snake offered to eat the lad, for the custom of those parts was to return evil for good.

(*c*) The snake let the boy go on the latter's promising to return to him in eight days.

(*d*) The boy remained downcast at his father-in-law's. On the eighth day he started for his home, his wife accompanying him. He asked her and the servants to go back, for, said he, he was fated to die. The wife clung to him, the servants returned. They now came to the snake who started to devour the boy. The wife pleaded and asked for the origin of the strange custom of returning evil for good.

(*b*) She was referred to the *tāli* trees which said that they saved the life of a thief who, an ungrateful wretch as he was, caused one of them to be hewed down.

(*d*) The girl offered to be eaten first and wept copiously. The serpent gave her for comfort two pills which when swallowed by her would give her two sons who could support her. But she pleaded that to have sons in the absence of her husband would affect her good name. The snake now brought out two more pills and gave them to her saying: "Revenge will sweeten your lot. When any of your neighbours revile you on account of your sons, take one of these pills between finger and thumb, hold it over them, rubbing it gently so that some of the powder may fall on them, and immediately you will see them consume away to ashes."

By that very trick she killed the snake and saved her husband.

B.—(*Original*). THE KATHĀ SARITSĀGARA.

(Nirṇaya Sāgara Press—pp. 584–585.)

The story of Kesaṭa and Rūpavatī.

This is really the origin of the Santāli and the Panjabi tales which have been modified. The Panjabi variant may have been current in Bengal, as further research may show, and was then appropriated by the Santals.

The *Kathāsarit* story is this: Kesaṭa, beautiful as the second God of love, was the son of a rich Brahmaṇa of Pāṭaliputra. Roving along he came to the bank of the Narmaḍa where he found a marriage procession. An old Brahmaṇa

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requested him to be the proxy of his son as a bridegroom, for the latter was the pattern of ugliness going to be married to a very beautiful bride, and deliver the bride to him after the marriage was over. Kesaṭa agreed. In the evening darkness when Kesaṭa was going to the water's edge he found a terrible Rakshasa who offered to devour him. Kesaṭa asked him to desist for the while, promising to return to him after he had done the business for the Brahmaṇa. The Rakshasa released him. He was then married to Rūpavatī, and every one was delighted with the well matched couple. But Kesaṭa remained morose and was engrossed in deep thought. Finding him thus Rūpavatī feigned sleep. Imagining that she was asleep, Kesaṭa stole away from the bridal chamber, but was followed unnoticed by Rūpavatī. The Rakshasa approved of his courage and was proceeding to devour him when suddenly Rūpavatī intervened, saying: "Eat me rather; what would happen to me if my lord were devoured?" (*Mām khāda bhakṣite hyasminpatyau kā me gatir bhavet*). The Rakshasa said: "Beg alms." She asked, "Who would give me, a woman, alms?" Then the Rakshasa said: "If you beg alms of anybody, and he refuses, his head would split into hundred pieces." She said "*Tarhi tvameva me dehi bhartṛbhikṣāmimāiti*—Then you give me my husband by way of alms (lit. the alms of my husband to me)." As he refused to do so, his head split. Thus she saved her husband.

C.—(*Other Parallels*).

The "*Promise to return*" [12 (*c*), and 12 A (*c*)] is a familiar motif in fiction. See N. M. Penzer's *Ocean of Story*, Vol. III, 33; VII, 203–204; and IX, 55.

Cf. *The Parable of the Hunter who was moved to compassion* (pp. 28, 29) in the *Life and Stories of Pārśvanātha* (edited by Dr. Maurice Bloomfield—Baltimore, 1919). —"A certain hunter in a forest, his bow at the point of his ear, was implored by a gazel facing death to be spared, until she had nursed her young, otherwise sure to perish from hunger. She would take upon herself the consequence of the great five sins, *if she did not return after having nursed them*," also pp. 183, 184 of the same book.

For the "*Head bursting*" motif see Bṛhaddevatā, 4,120; Pārśvanātha, 2, 812; Jātakas, 210, 358, 422; and "*Devil Tricked*" ('Dummer Täufel'), see kathās, 28, 156 ff.; ZDMG. lxi, 20 with note on p. 69.

I am quoting the following from p. 184.

Vetālapañcaviṃśati: Śīvadāsa, 9; Kathāsaritsāgara 84; Baitāl Pachīsī 9, Madanasenā is engaged to Samudradatta. Dharmadatta sees her, falls in love with her, and exacts from her a promise that she will come to him, untouched, on her

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bridal night. Her husband generously permits her to go to her ardent lover. On the way she is seized by a thief, who is also ravished by her beauty. She tells him of her tryst with Dharmadatta, and begs him to wait for her return, because she must keep her promise. When she comes to Dharmadatta, she tells him what has happened. Rejoiced at her truthfulness, he lets her return to the thief, who in turn is moved by her faith, and allows her to return to her husband with whom she lives happily ever after. For parallels outside India see Tawney in his Translation of Kathā saritsāgara, vol. ii, p. 281 ; Oesterley, Baital Pachīsī, p. 197 ff., also Hitopodeśa in Braj Bhākhā (Hertel, Das Pañcatantra, p. 56, who cites a variant from Hemavijāya's Kathāratnākara), the cow's promise to return to the lion ; also Jātaka 513, the king's promise to return to the ogre.

For 12 (b), 12 A (b) cf. the familiar story of the Tiger, the Brahman and the Jackal who tricked the tiger back into the cage and saved the Brahmaṇa. See also Steel's *Tales of the Panjab* (pp. 107 ff.), also stories Nos. 14, 22, 23, Ho Folklore—A Fox's Ruse, etc. in JBORS, Vol. II, p. 289 ; Vol. IV, pp. 324–327. Cf. the story of *the Man and the Snake* in the *Myths and Legends of Ancient Israel*, Vol. III, pp. 82–83, by Angelo S. Rappoport (Gresham Publishing, 1928) for the modification of the Indian story to illustrate Solomon's wisdom.

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13. Folklore of the Santal Parganas.

CVII. *The Leopard outwitted.*

A hunt was made to kill a man-eating leopard who overtook a merchant and requested him to save it, swearing an oath not to eat him. The merchant hid it away in a sack, put it on his bullock and drove on. Directly the sack was untied the ungrateful animal proceeded to devour the merchant, who unsuccessfully referred the matter for a fair arbitration to a stream, and a tree which decided against him. Then he appealed to a jackal who wanted to see how it was done, pretending not to understand the matter, and tricked the leopard to get back into the sack. The leopard was then killed.

A.—(*Other Parallels*)—See No. 12.

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14. Folklore of the Santal Parganas.

LII. *Tipi and Tepa.*

They lived on baked cakes. A bear in the jungle wanted to eat them up, but spared them on condition that they would give

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him cakes to eat. They baked the cakes for the bear, but ate them all and hid inside a gourd which was carried off by the bear on the shoulder. Whatever fruits the bear gathered and put inside the gourd were eaten up by the occupants till Tepa burst, and the noise frightened the bear away.

A.—(*Others Parallels*).

Unpublished Bengali story of the same name, but it is a tiger and not a bear. They hid in an earthen jar. Cf. also G. Misra's *Indian Folk tales*—the story of the *Feast of Cakes* (No. IX). In May last (1929) I heard the same story in Oriya at Cuttack which exactly corresponds to the Bengali tale.

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15. Folklore of the Santal Parganas.

XLV. *The Tiger's Bride.*

A woman had cut thatching grass in the jungle and made a pile too heavy to lift on to her head. She promised to give her daughter to anyone who would help her. A tiger helped her; she had therefore to give her daughter in marriage to him. The latter asked his wife to cook him a feast to which he went out to invite his friends. The girl caught a cat, killed it, hung it over the fire, so that its blood dropped slowly into the pan and made a fizzling noise as if cooking were going on. Meanwhile she fled to her mother's house, climbed a tree and sang a song. The disappointed friends of the tiger, cheated out of a feast, beat him, so that he ran away and was no more seen.

A.—(*Other Parallels*).

An unpublished Bengali story runs thus. Some girls had gone to the jungle and climbed the cowrie tree belonging to a tiger and rifled it while the tiger was away. On the latter's approach all fled excepting a girl who hid herself away in the branches. The tiger lay down. The girl despairing of escape began to weep and hot tears falling on the tiger discovered her. On her promising to marry him (he was a widower with two cubs) she was not eaten, but asked to prepare a feast. While the tiger went out to invite his friends the girl killed the cubs and let their blood fall on the frying pan which simulated cooking. The girl fled away and ultimately killed her husband (when he came to her house to demand her back) by throwing hot gruel over him.

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16. Folklore of the Santal Parganas.

LIII. *The Child with the ears of an ox.*

A Raja was anxious to hide the bovine ears of his child. The barber found it out when shaving the child's head, but being warned vowed not to babble it out. But his stomach swelled to an enormous size which diminished only when he divulged it to a Dom, who made a drum by cutting down a tree. He sang as he drummed:

"The son of the Raja
Has the ears of an Ox."

A.—(Other Parallels).

Cf. King Midas and his Ass's ears and the Barber. Substantially the story is current amongst the Biharis, at least in Monghyr, and I have heard the story told in Hindi.

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17. Folklore of the Santal Parganas.

XVII. *Kuwar and the Raja's Daughter.*

A Raja founded a school where his sons and daughters used to read. Kuwar the son of a rich merchant attended that school. He and the Raja's daughter fell in love with each other. She wrote him a letter to marry her; ultimately they planned to run away. But their intentions were discovered and they were watched. The princess went to Piyari, a mare in the royal stable, and she promised to do her bidding. A day was fixed for elopement. The mare jumped over the wall and carried the princess to a tree where Kuwar was waiting, and driving like the wind she transported them to a far country. Unwittingly, they took shelter in the house of an old woman whose seven sons were robbers and murderers. The old woman wanted to get the princess to her youngest son's wife and to kill Kuwar. So she gave her rice and cooking pots to delay them. After finishing their meals the pair mounted Piyari and galloped off. The old woman to hasten the return of her sons set fire to her hut on which signal they hurried home. The seven robbers caught them up, killed Kuwar and asked the youngest brother to snatch the princess off the dead body of Kuwar over whom she was weeping. At his intercession the princess was left there with her dead lover. Meanwhile Chando pitied her case, but sent Bidhi and Bidha to test her constancy. They assumed the forms of tigers and leopards but could not frighten her into yielding up to them the corpse of her lover. Pleased with her Chando restored Kuwar to life.

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XXVI. *The Merchant's Son and the Raja's Daughter (Variant of the above story).*

A.—(*Other Parallels*).

Cf. the story of "Sakhi-Sonā" in its several vsrsions in the "Folk literature" of Bengal (D. Sen's) pp. 200–232, including that of "Pushpamālā" in Dakshināranjan Mitra Majumdar's book.

The Uzir's son Manik and princess Sakhi-Sonā read in the same Makhtub. They fell in love and eloped; and ultimately came to the house of the mother of the seven dacoits. She gave them wet fuel and rice to cook. They were however warned of their danger, and fled. But the old hag tied a leaking bundle of mustard seeds to the tail of the horses. The seven brothers overtook them by this sign. Manik killed six brothers but was killed by the seventh; and was again restored to life by a *pir* (saint). They then came to a flower woman who falling in love with Manik changed him into a monkey. Now disguised as a youth Sakhi-Sonā came to a city where she was put in prison, but having killed a serpent who devastated the city was married to the princess. Manik was restored by Sakhi-Sonā to his own form and lived happily with his two wives.

Fakir Rām's version is almost the same. The hero (Kumāra) is changed into a goat. In Mitra Majumdar's version the hero is revived through the grace of Siva.

Cf. in the *F.T of Orissa* the story of *Halahal Kumara or the Snake Prince* (p. 100 ff.); here they are seven monsters and their mother, with the incident of mustard seed bag tied to the tail of the horses, where the hero Abhimanyu kills the six brothers but spares the seventh and was ultimately killed by him. Sasisena (version of Sakhi-Sonā), the heroine, makes Tima the monster disgorge her husband and ultimately revives her husband through the grace of Siva. The Sorceress Maluni, Jnandei metamorphoses Abhimanyu into a ram. Sasisena kills a fierce *Gayal* and wins the hand of the princess. She causes Abhimanyu to be restored to his human form.

For a close resemblance to the *Orissa* version see Kincaid's *Tales of old Sindh* (1922, OUP) story of *Kamsen and Kamrup.*

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18. Folklore of the Santal Parganas.

XLVII.—*The Dream.*

The wife told her husband in bed that she had dreamt she had dug up a pot full of rupees; she wanted to test the dream next morning. Some thieves who were on the roof desiring to forestall her went to the place indicated in the

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dream and dug out the pot. When the lid was taken off a serpent popped out its hood and hissed at them. They put the lid back, carried the pot to the roof, and through the opening in the roof dropped it intending to punish the wife. As it fell the snake changed into a stream of money.

A.—(*Other Parallels*).

Cf. a Bengali story exactly like this, also Dr. D. Sen's *Folk Literature of Bengal*, p. 196 where Syed carried home a cobra, to kill his sharp tongued wife, in a pot. At midnight it was changed into gold coins.

Cf. also No. 325, p. 224. T. II of *Cinq Cent Contes et Apologues* "celui qui avait trouvé un mangouste d'or." (....et le serpent se changea de nouveau en or) cf. Julien, *les Avadānas* t. II, p. 92–93.

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19. Folklore of the Santal Parganas.

LV.—*Jogeshwar's marriage.*

A jackal being trapped by a weaver was released on promising to marry him to a Raja's daughter. He prevailed upon the Raja to choose Jogeshwar, the weaver, as his son-in-law (though he had not seen him) and fix a wedding day. He got all the paddy birds to mount the jackals. A procession of white horsemen stretching over two miles was thus artificially managed. Jogeshwar was taught how to behave and the wedding passed off smoothly. The disillusionment came only when the bridal party reached Jogeshwar's hut.

A.—(*Other Parallels*).

This is a very familiar nursery story, we knew it all in our younger days.

Cf. the story of the *Clever Jackal* in *F. T. of Kashmir*, pp. 186-188. (Footnotes on p. 188. Cf. Chilian story. "Don Juan Bolondron in Folklore Journal" Vol. III, p. 299; also Mongolian Tale in the same Journal, Vol. IV, p. 32); *F. T. of Bengal*—The Match-making Jackal, pp. 226–235. A very close parallel will be found in the *Ingenious Orphan* see J. H. Hutton's *The Angami Nagas* (1921).

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20. Folklore of the Santal Parganas.

LIX.—*The Charitable Raja.*

A Jogi came to a charitable Raja and demanded his kingdom and everything of him. The Raja granted his request and

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went out a beggar with his wife and two children. Reduced to misery the Rani went to a merchant to beg for some clothes. He fell in love with her and shut her up. The Rajah went in search of her and came to a flooded river. He carried one child across first, but was swept away by the current when he was returning for the other. A childless *goala* woman brought the children up. When the Raja was stranded far down the river, he found himself surrounded by a crowd. An elephant belonging to the Raja of the country who died without an heir chose him to be the king, carried him on his back and seated him on the throne. Meanwhile, the two boys grew up and became Sipahis at the royal palace. On a festival the merchant came with the queen, and it so chanced that her own sons kept guard over her. As they talked they were recognised to be her own sons. And the whole family was happily united.

LX—A variant. In this the Raja was swallowed by a fish and was again found to be whole when the fish was cut open. He was engaged as a retainer by the Raja of the country when he came. His abandoned boys were also found out. The queen was seized by a wicked merchant. She was discovered by the Raja and his sons. And they met ; but the tale does not end happily.

A.—(*Other Parallels*).

We are reminded of Raja Harishchandra's great gift.

Cf. the story of the *Hawk and the King-maker* in *Orient Pearls*, pp. 13–19. The king at the request of a rascal disguised as a holy man, left the state to him and set out with the queen and his two little sons. A merchant took away the queen by false pretences. The king did not find her. A stream stopped his progress. He left one Prince on the bank, and with the other on his shoulder began to cross the stream. A tiger came and carried him away ; as the king turned to look, the prince on his shoulder was jerked off into the water and drowned. He wandered by and by and came to a territory whose king had just died. There was a quaint old custom of choosing a successor by lot. The people came with a hawk and a gold crown. The hawk perched on the head of the king and chose him as the new king. The merchant brought the queen as a bride to the new king ; and a hunter and a fisherman brought the two princes, who as they talked among themselves were recognised by the queen.

Cf. the story of *Kuhuka maṇḍala* in the *Folk Tales of Orissa* pp. 156. The young merchant left his wife, a child and a new born babe to bring some fire-wood. Meanwhile the *pāt-hāti* (the elephant royal) chose him to be the king and carried him away. The princess was forcibly carried away in a ship apparently by some pirates to make her the new king's consort.

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The children were found by some milkman and reared up. When grown up they accompanied their father to the palace and were detained by the queen who took a fancy to them. The elder boy related his adventures to his younger brother and was overheard by the queen and all were happily united.

Cf. *Pride Abased* in *Folk Tales of Kashmir* (p. 165 ff.).

Cf. G. Misra's Indian Folk Tales—The wonderful bird.

B.—(Original). Life and stories of Pārśvanātha, p. 63–68.

Story of the Chaste royal pair Sundara and Madanaballabhā.

I believe the stories in the vernaculars have all been derived from the Jaina story which is this. Good King Sundara of Dhārāpura and his queen Madanaballabhā had a pair of exemplary sons, Kīrtipāla and Mahāpāla. Being warned one night by the house divinity that his would be a rude fate, the king realising that his trials must be due to his karma, chose to shoulder them without delay. He placed his kingdom in charge of his minister Subuddhi and went out with his wife and children in humble garb. While asleep on the road he was robbed by a thief who took away the provisions and also the signet ring. Plagued by hunger and thirst all four arrived at the City of Pṛthvīpura. A merchant Srīsāgara allowed them to live in his camp. The queen earned their living by doing chores in neighbouring houses. Somadeva, the head of another caravan, enamoured of her, carried her off to his own city, but her virtue foiled his designs. Meanwhile Śrīsāra, another merchant, pitied the king's conditions, and offered him shelter and food for the service of the boys who tended his temple. But as the latter hunted birds he beat them. The king started with the boys, crossed a dangerous forest and arrived at an unfordable river. He put one of his boys on his shoulder, crossed the river, and left him there. But on returning to fetch the second, he was carried off his feet by the flood, and saved him by floating on a log. Thus separated, in despair, by and by he came to Śrīpura, in the outskirts of which he went to sleep under a mango tree. The king of Śrīpura having just died sonless, the five oracle method (*pañca divya-adhi-vāsana*) of finding a successor was employed. The procession of elephant, horse, chowries, umbrella, and water jug, headed by the court arrived at the spot where Sundara slept. The horse then neighed, the elephant roared, the waterjug emptied itself on the king, the umbrella stood over his head, and the two chowries waved.

The king's two sons separately wandered far, but in time each arrived at Śrīpura and met at the watch of the town. The merchant Somadeva also, having Madanaballabhā, their mother, in his caravan, came to that city, and asked the king

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for watchmen for his caravan. The two boys were assigned to this duty. By night, in order to pass time, the two brothers told their own stories, and were overheard by their sad mother who lay awake. She came out and embraced her long-lost children. All were united and lived happily.

For the *pañca divyādhivāsa* see my article on the *Originals and Parallels of Folklore of the Santal Parganas* in J.B.O.R.S., Vol. XII, pt. IV, p. 583 and additional notes in the *Life of Pārśvanāthā*, pp. 199. (Edgerton's Article in J.A.O.S., XXX, 158 ff; by J. J. Meyer, Hindu Tales, pp. 131, 212; and by Hertel, Das Pañcatantra, p. 374, etc.) For Harischandra's abandonment of kingdom with a counterpart which the Santal tale begins, see *Life of Pārśvanātha*, p. 91, and foot note No. 33 (Markaṇḍeya Purāṇas 7, etc. "Echoes of the same story may be found in Chavannes, *Cinq cent contes et Apologues chinois*, Nos. 6 and 13, and in Stokes, *Indian Fairy Tales*, pp. 224 ff.") I am somehow reminded of the distress that overtook Prince Vessantara in the Jātakas.

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21. Folklore of the Santal Parganas.

LXI. *The Two Wives.*

The Raja's son and the Dewan's son who had married in their infancy wished to see their wives. First they came to the house of the Prince's father-in-law. The Prince slept but his friend kept awake. He saw the Prince's wife leaving her sleeping husband and followed her. She came to her paramour, a Gosain, who reproached her for the delay, and ordered her, if she really loved him better than her husband, to cut off the latter's head and bring it to him. She did so, but was spurned by the Gosain who would have nothing to do with a heartless woman who could kill her husband. She returned and raised a cry that her husband was murdered. But the real facts were proved and she was hanged. The Dewan's son took away the head and body of his deceased friend, put them in a hollow tree and entered his father-in-law's house. At night he saw his wife going out. He followed her to a shrine of Mahādeva who pleased with her devotion offered her a boon. She and her husband prayed that the Prince might be restored to his life which was granted.

A.—(*Other Parallels*).

Cf. the *Tale of a Merchant* in *Hatim's Tales* by Stein and Grierson.

The merchant's unfaithful wife has for her paramour a Faquir to whom she brings a dish of cooked rice and begs him to eat. He cudgels her and asks "Why so late?" "My husband has come to-day, hence the delay." "First bring me that

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merchant's head and then I shall sup." She cuts off her husband's head and brings it to the Faquir who spurns her. The woman comes to the king's court and complains that her husband was killed by thieves. The king saw everything *incognito* and knew the whole thing.

For the revival of the prince by the grace of Mahadeva cf. the story of Phakirchand in *F. T. of Bengal* pp. 50, 51 where the minister's son through the help of his wife who was a devout worshipper of the Goddess Kālī brings back the Prince's son to life. Cf. the *Upakathā*—a long poem composed by Mahārājā Harendra Narayan Bhup Bāhadur of Cooch Behar, a short account of which was published by me in the *Mānasī-o-Marmavānī* in B.S. 1324. The Cooch Behar Sāhityasabhā is editing the work.

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22. Folklore of the Santal Parganas.

LXIV. *The Dumb Shepherd.*

A Raja wanted to test if any of his officers could guess what he was thinking. The Dewan was to find such a man, and when he was perplexed his daughter desired him to present their dumb shepherd before the Raja. When they met the Raja held up one finger, the shepherd held up two. The Raja held up three fingers, at which the shepherd made signs of dissent and fled away. The Raja was mightily pleased. He was arrogant and thought himself to be the most powerful Raja. The Raja explained that when he held up one finger, he meant he was the only one powerful Raja in the world, and there was no second, but the shepherd in holding up two fingers reminded him that there was God "who was as powerful as I am." When he asked him if there was a third the shepherd said, 'No' and went away. This is how the shepherd looked at the matter:—He had three sheep. When the Raja by raising one finger demanded a sheep of him, he offerd to give him two, when, however, he wanted all the three by raising three fingers, he dissented and came away.

A.—(*Other Parallels*).

One of the unpublished Bengali stories regarding the poet Kalīdas is this. He was a great blockhead before the Muse smiled on him. Now the princess of the country was very learned, and challenged all the Pandits to hold dispute with her in the *Śāstras* in which they got invariably worsted. To be revenged on her they searched high and low for a stock blockhead and finding Kālidāsa who was cutting away the branch of a tree on which he was sitting chose him as her match. When

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the Princess met Kālidāsa she raised one finger meaning that God is one. Kālidasa thought that the woman insulted him by pretending to chastise him with one finger, and to show that he would do the same to her, raised two fingers. The princess understood this to mean that there were *Puruṣa* and *Prakṛti*, that is two. She showed him the palm of her hand with all the fingers outstretched, meaning that the five elements went to compose everything. Thinking that the princess meant to slap him with her five fingers outstretched, he shook his fists at her and made a whirling motion with the hand. The princess understood that Kalidāsa showed that the entire śāstras were in the fist of his hand, and he knew the *tatva* of the whole universe.

Cf. the '*Mahā-ummagga-jātaka* (No. 546. Camb. trsln. Vol. VI, p. 240) where there is no misunderstanding. The religious woman asked Bodhisatta a question by a gesture of the hand. She opened her hand. He clenched his fist. The meaning is "Is the king open-handed to you?" The reply is "No, he is close fisted."

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23. Folklore of the Santal Parganas.

LXXXVIII. *Sit and Lakhan.*

A Raja had two sons born of his first wife, named Sit and Lakhan. Their mother died. They were hated by their step mother. She pretended to be ill, and when no medicine could cure her, she said that she would be well if she could get to eat the livers of Sit and Lakhan. The Raja asked his Sipāhis to take the princes to the jungle, kill them, and bring him back their livers. The Sipāhis left the princes in the jungle, killed two dogs and brought their livers to the Raja. The Rani ate them and sat up on her bed cured. The two brothers wandering in the jungle sat under a tree in which a pair of birds had a nest. A snake went up the tree to eat the young birds, but it was killed by the brothers. When the parent birds returned the grateful nestlings asked them to give the boys some food. They threw down two bits of food. Whoever would eat the first piece would marry the daughter of a Raja, whoever would eat the second piece would spit gold. Sit ate the first and Lakhan the second. Next morning a royal elephant appeared with a flower, offered it to Sit and carried him away to the Raja who married his daughter to him. Lakhan was at last found to be living in the house of a potter who would not part with him as he spat gold, but when he was amply compensated he was let off and the brothers were re-united.

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A.—(Other Parallels).

Cf. in the F. T. Bengal the story of Swet Basanta (pp. 96 ff).

A merchant's son had two sons, Swet and Basanta: and when their mother died their father married another wife. A fish was brought to the house; if anybody ate it he would drop pearls if he wept: and *māniks* (gems) if he laughed. The step mother wanted to have Basanta killed. Swet's wife told her husband the wonderful properties of the fish which the two brothers ate and all three fled into the jungle. Here Swet's wife gave birth to a son. In order to warm the babe Swet went out in search of fire (cf. story of Kuhuk Mandal in *F. T. Orissa*) when all of a sudden a gaily caparisoned king-maker elephant placed him on his back and made him the King of the country who died overnight. Swet entered the queen's chamber at night but kept awake. The queen was sleeping, and at midnight a thin thread came out of her nostril and soon assumed the shape of a huge serpent. Swet cut off the head of the beast, and surprised everybody who thought he would be dead. Meanwhile Basanta sat waiting for his brother to return with fire. A merchant passing in a boat landed and seeing heaps of *māniks* and pearls by the side of Basanta made him captive and brought him to his country where by scourging him to tears and tickling him to laughter he got rich immensely. Swet's child was kidnapped by a kotwal, and the disconsolate mother was saved from committing suicide by a Brahman who adopted her as his daughter. The kotwal's son wanted to marry the Brahmin's daughter, but this incest between the mother and the son was averted by the Brahman who overheard the conversation between his calves. All were united in the end.

Cf. Dr. Dinesh Chandra Sen's *Folk-literature of Bengal* (1920), pp. 165–193; and compare with it in the *Tales of the Panjab* the story of *Two Brothers* for incidents of eating of the mystic fowls, the king maker royal elephant; the ship detained by calms and the human sacrifice to start it, the younger brother's marriage to a princess or a merchant's daughter, his overthrowing into the sea and rescue by his wife. For starting the vessel Cintā's touching the ship may be mentioned.

Cf. Knowles' *Tales of Kashmir* stories of *Two Brothers*, and *Four Princes*; *Hatim's* Tales (VIII. The Tale of a king).

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24. Folklore of the Santal Parganas.

LXXVII. *The Wife who could not keep a Secret* (*a*).

LXXXVIII. *The tell-tale Wife.* (*b*).

(*a*) A Goala learnt from the calf of his cow that at a particular place lay hidden four pots of rupees: he wanted to see if his wife could keep the secret. So he made up a tale that the Raja had a tortoise in him, and asked his wife to cook him some food so that he might go and look at it. His wife went out to fetch water and in a short time the secret had become a public property.

(*b*) A wife asked her husband what lay in the pot which he hung from the roof. In order to test her if she could keep the secret he said: "The head of a man I have murdered. Keep the news a secret, or my life will be forfeit." One day they quarrelled and the wife informed the headman what lay hidden in the pot.

A.—(*Other Parallels*).

Cp. Jat. 546. "*The secrecy of a Secret is always good.*" "'The wise Mahosodha must be slain' if you told this last night secretly to your wife, your secret was disclosed and I heard it"

Cf. p. 152, Schiefner and Ralston's *Tibetan Tales* where Mahaushadha in order to test whether his wife, the king's daughter, could keep the secret told her falsely that the peacock he gave her was the missing peacock of the king and asked her to cook it for him and that he was intimate with such and such a wife of the king's. She disclosed it to her father. Cf. also Rappoport, *op. cit.*, pp. 72ff.—*The Three Brothers.*

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25. Folklore of the Santal Parganas.

LXXIX. *The Raja who went to Heaven.*

A Raja saw one day, after his bath as he was walking about and looking at his trees on the bank of his tank, that a maiden climbed the tree which was then carried up to the sky. But in the evening he saw the tree in its place again. This happened for four days running. One day the Raja climbed the tree in advance and then when the maiden climbed the tree he was also carried up to the sky along with it. The maiden descended and joined the dance of Gupinis, and the Raja did likewise. He was absorbed in the dance, the tree disappeared and he was stranded. He then went back to the earth with the help of the tree when it next appeared.

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A.—(*Other Parallels*).

For the magic banyan tree which carried a maiden up into the sky and by which he himself went to heaven see in Kincaid's *Tales of old Sindh* the story of *Prince Amul Mānik and the Princess Husini* and the pipal tree which carried the Prince to Dev Suphed's garden.

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26. Folklore of the Santal Parganas.

LXXXIII. *The Sham Child.*

The elder Rani who was childless was sent by the Raja to live in a palm leaf hut. Listening to the advice of her maid servant she tricked the Raja into believing that she was five months with child. The Raja relented and made a house for her. He was informed in proper time that a boy was born. After sometime they got the price for making some anklets with bells for the prince to wear. When the Raja passed by her house the Rani rattled the anklets to convey the impression that the child was running about. But he was never given an opportunity of seeing the prince. A bride was selected by the Raja for his supposed son and a day fixed for the wedding. At the time of starting for the bride's house, the maid servant made a paste of ground *mahua flowers* and out of this fashioned an image of a child which she carried in a palki. The procession stopped for the night at a bazar where there was the shrine of a saint. The maid servant went to it and asked the spirit (*bonga*) who dwelt there that he must grant her a boon else it would be the worse for him (she would spit and curse) pretending that her son was changed into a paste which he should convert into a boy. This was done.

A.—(*Other Parallels*).

Cf. the story of the Wax Prince in the Orient Pearls (*pp.* 20–28).

The king was sad for he had no heir. The queen to cheer him said that she would present him with an heir. She pretended that if the king looked upon the child it would die. She lived now in a separate place, and all along shammed that the child was born, he grew up, a tutor was engaged and so forth, which she managed by bribing. The king thus lived in a fool's paradise. Now a day was fixed for the Prince's wedding. The queen was mortally afraid lest her deception might be detected. She made a wax figure of a prince beautiful and life like, which he put into the palki, asking the king never to look in. When the procession halted on the river bank, and the door

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of the palki was left ajar, a snake coming out of the river crept into the palki, and having got inside the figure animated it. It was a mystery to all, but when the mother of the prince advised, her daughter-in-law insisted on knowing who he was, he entered a river and showed that he was a snake.

Cf. the story of "the Cat who became a queen" in the Folk-Tales of Kashmir.

The queens having no children adopted a kitten and shammed throughout that a princess was born, she grew up and so forth. The Brahmans were said to have declared that the princess must not be seen by her father till she was married. He was kept informed of her beauty. The king selected a handsome prince as her bridegroom. Fearing lest their deceit would be discovered by the king, they disclosed everything to the prince and begged him to keep the secret which he did. He carried away the cat with great solemnity. At the intercession of Parvati with Siva she was changed into a beautiful woman. Cf. *Tales of the west Highlands*, vol. II, p. 274.

Cf. Jātaka No. 445 (*Nigrodha Jātaka*). *Shamming of pregnancy.*

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27. Folklore of the Santal Parganas.

CXXII. *The Brave Jackal.*

A goat took refuge in a leopard's cave. When the latter came the goat uttered a mysterious cry '*Hum Pak Pak.*' The leopard thinking that a terrible animal now tenanted his cave fled away. The jackal boasted that he was not at all afraid, and offered to accompany him to the cave. They tied their tails together and as they neared the cave the grisly goat stood up. The leopard took fright and fled for life and dragged the jackal by the tail scraping off all his skin.

A.—(*Other Parallels*).

Cf. the Bengali story of the goat taking shelter in a tiger's cave. The tiger took fright, the jackal came to his aid and when they approached the cave the goat cried out. "সিঙ্গীর মামা ভম্বোল দাস, বাঘ মেরেছি গণ্ডা দশ" I am maternal uncle of the lion, called Bhambol Das and I have killed forty tigers." The tiger fled dragging the jackal after him.

Cf. the Close Alliance in Tales of the Panjab (P. 127) *for the tail-tying incident.*

When the pair, tiger and jackal tail-tied appeared, the farmer's wife said politely. "How very kind of you, dear

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Mr. Jackal, to bring me such a nice fat tiger. I shan't be a moment finishing my share of him and then you can have the bones." The tiger bolted away full tilt, dragging the jackal behind him—Bumpety, bump, bump over the stones, crash, scratch patch, through the briars.

Cf. story (*No.* 29) *of two Jackals, a Tiger and a Monkey in JBORS, Vol.* IV, *pp.* 339–42.

Here the monkey and the tiger reef-knotted their tails and came to the cave tenanted by a she-jackal, who said: "You lazy monkey, I ordered you to bring in seven tigers and you are fetching me only one!" The monkey escaped with slight bruises, as the knot got loose when the tiger ran for his life.

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28. Folklore of the Santal Parganas.

LXXXII. *The Corpse of the Raja's son.*

Chitru suspecting the infidelity of his wife who was visited by a prince lay in wait for him, and killed him. But he was in difficulty with the corpse and began to wonder what he should do to avoid being convicted of murder. So he carried it to the house of two dancing girls of the village and laid it inside. They were in consternation to find the corpse there, and to get out of the scrape called for Chitru who had a fame for cunning. He came, affected surprise, and for a reward carried it and laid it down at the verandah of a *mahajan* who, again, sought his aid to get out of the difficulty. This time Chitru took the corpse and put it in a sitting position in a little patch of brinjals which a koeri had planted. Thinking the corpse to be a thief the koeri pelted it with a stone and found the dead body. As the day broke and there was no chance of shoving it off again, he was sent for trial, but was acquitted as he had acted unwittingly.

A.—(*Other Parallels*).

This is obviously an emendation of the story of Kubja and Darji, a Bengali comedy, relating how a hunchback eating too full a meal at the house of a tailor had appeared dead and how the corpse was shifted on from place to place during the night.

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29. Folklore of the Santal Parganas.

XXX. *The Raja's Son and the Merchant's Son.*

XLI. *The Broken Friendship.*

The son of a Raja and the son of a merchant were great friends. They would not mind their lessons but would play truant from school and waste their time. The Raja tried to break off their friendship, but in vain and ultimately announced a reward to anyone who could separate them. One of the Raja's concubines was resolved to win the reward. One day she met the two boys as they were going out to bathe. The Raja's son was walking ahead and the merchant's son a little way behind; the woman ran after the merchant's son and threw her arms round him and putting her lips to his ear pretended to whisper to him and then ran away. The Prince asked his friend what the woman had told him; the latter denied that she had said anything, but for all his protestations the Prince would not believe him. The Prince flew into a rage, would not eat and drink till his friend were put to death. The Raja asked some soldiers to kill him. They led him to the jungle, let the boy off, killed a lamb, steeped his clothes in the blood of the lamb and showed them to the Prince, who now wanted back his friend, who of course was produced.

In the second story an old woman made two men carry a bed (hung over with a curtain) containing some rotten manure and parade it through the bazar with drum beating, to the place where the sons of the Raja and the Dewan were hunting. The Raja's son peeped inside the curtain, but jumped back for smell. The Dewan's son would not believe it. The woman told that she would tell its meaning to one of them, and then he might tell his friend. She put her arms round the neck of the Raja's son and pretended to whisper. When the Dewan's son asked his friend about it, the latter told him that she only pretended to say but did not really say anything. But he would not believe, and brooding that being a friend he could not have a secret confided to him separated.

A.—(*Other Parallels*) Romantic Tales from the Panjab.

The Prince and his Vizier (pp. 246 ff.).

One Bugla being jealous of the Prince's friend desired to sow distrust between them and commissioned an old woman to do it. She rode a litter, covered her face with a veil and asked her bearers to carry her near the Prince whom she beckoned to come near. The Prince sent his friend, on whose neck the woman led her hand and made as though she were whispering to him

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something of importance. The Prince urged him to give out the secret which of course he could not, as there was none. The Prince wanted to see his friend's blood which the executioners showed him by killing a tame deer. Bugla now became the Prince's minister instead but being worthless was dismissed and the Prince's friend was ultimately restored to him.

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30. Folklore of the Santal Parganas.

IV. *The cruel Step mother.*

This is a make-up tale of various episodes, all familiar.

(*a*) A Raja's wife died leaving a young boy. The Raja would not marry first, but then married a widow who would take charge of the child. She was kind to him till she had a child of her own, and then she brought false accusation against him till he was driven off to the jungle.

(*For parallels see parallels to story of Sit and Lakhan.*)

(*b*) The boy began to cry; Thakur came down and appeared to frighten the boy in the guise of a leopard, bear, snake and elephant but he would not move.

(*Resembles the Dhruva episode.*)

(*c*) A Brahman found him and made him a goatherd. He was named Lela, learned letters, became a scholar, and came upon a love letter from a girl proposing to elope with her lover. Lela eloped with her; she perceived her mistake but was reconciled. They came to a city. Lela became a *muktear*. The Raja thought that as he was handsome his wife would be more handsome and wanted to get possession of her.

(*This part resembles an unpublished Behari folktale of which the manuscript is with me, though there are other variations.*)

(*d*) The Raja gave him some task which he was sure would end his life. He asked him to bring the Chandmoni Kusum flower, hoping Lela would be eaten by the ogress who dwelt there.

(*This is a very ancient trick in fiction known as the David and Uriāh motif*). Samuel xi. Cf. *Petavatthu* (Commentary iv, 1, 216–217; iv, 15, 279–280; Jat. 314, iii, 43–48. Story of King Cyrus and Queen Panthea. Dhammapada commentary, Bālavagga. Book V, and *Life and Stories* of *Pārśvanātha* p. 207 for the following references: Pārśvanātha 6, 1057 ff., Kathākośa, p. 32 ff.; Jacobi, Ausgewählte Erzählungen in Mahārastrī, p. 24, u. 14 ff. Hitopodeśa, 1, 8; Kathās, 32, 147 ff.; 34, 10 ff., Jātakas 120, 194, 314, 443. Dhpd. Commy. 5, 1; Kathākośa, p. 13. ff., Nirmala Śrāvaka reported by Hertel, Das Pañcatantra p. 231 ff., Benfey, Kleinere Schriften, vol. ii, p. 101).

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(*e*) His wife told him, that her younger sister was Chandmoni, she would give him the flower when called by name, which she ultimately did.

131. *The Unfaithful Wife* (CII) has for the first part an extremely close parallel in the story of *Price of Peace* in Bocaccio's Decamerone.

132. For *Catching a Thief* (No. XCVIII) see the story of Jihvā in Kāthasaritsāgara.

133. *Spanling and his Uncles* (LXII) and *Mongoose Boy* (LXVII) besides having a Mikir Parallel (see JBORS, XIV, pp. 139 ff.) have an Angami Parallel, in the tale of *The Man who turned Ashes into Rupees in* J. H. Hutton's "*The Angami Nagas*," (1921). For variant see the story of বড় রাম ও ছোট রাম in ঠাকুরমার গল্প by Balai Chand Chatterjee.

I refrain from quoting some parallels which strike the reader as very familiar.

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Race and Adaptability.

By D. N. Majumdar.

The Korwas whom I want to describe in this paper, find occasional reference in the Census Reports and District Gazetteers as the most primitive we possess in these Provinces. W. Crooke in his monograph on *The North Western Provinces of India*, writes about the Korwas. "They have attained only the most elementary social stage; they have no stable exogamous groups and practically no prohibited degrees in marriage; their houses are of the most primitive type—merely a booth of branches arranged in a circle and fastened roughly together at the apex. The true Korwa neither sows nor reaps; he lives in the forest and with his sharp spud digs up edible roots which with the fruits of jungle trees, constitute his food. He uses the bow and arrow but he kills little game now that wild animals have become much more shy and less numerous. But in the lordly fashion of the jungle dweller he claims the woodland as his own and when he makes over his daughter to the youth of her choice her dowry consists of a mountain side on which she has the monopoly of foraging for food."

In the District Gazetteer of Palamau, the Korwas are described as follows:

"In appearance they have a greater resemblance to the African Negroes than any of the Munda tribes,...round faces, very black skin, large mouths, very thick lips and broad flat noses. They are short, thick set men, with deep chests and broad shoulders giving the idea of great power, at the same time they are exceedingly active. Like all wild tribes they are very poor cultivators and subsist upon wild herbs and roots and the produce of the chase."

Such an active and powerful tribe, much more interesting from the cultural point of view are the Korwas of this Provinces who are distributed over the fringes of the Choto-Nagpur Plateau and are at present a dying tribe with little or no ambition in life; scarcely getting a full meal a day and always at the mercy of the money-lenders whose slaves they are for the debts af their forefathers as well as their own.

The primitive substratum of population in India forms nearly ·75% of the total population; the number of tribes composing this stock is approximately three hundred and the numerical strength of the tribes varies from 300 to 500,000. Tribes that cannot be enumerated in thousands find no mention in the Census Reports and are either ignored or grouped together with neighbouring tribes or castes by virtue of the religion they

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profess to follow or the dialect they speak. So the Census Reports give us practically no information about such tribes and if they give anything, it is impossible to arrive at any conclusion regarding the position of the tribes on the basis of such data.

The Census Reports of Bihar and Orissa of 1921 informs us that the number of Birhors speaking their own dialect has decreased from 1,013 in 1911 to only 258 in 1921. Evidently those Birhors who can talk the gawari Hindi of their Hindu neighbours have been affiliated to the Hindu section of the population. This procedure adopted by the Census authorities has however obscured the actual position of the tribe in its career of elimination.[1] Similarly the Korwas find only a passing reference in District Gazetteers and Census Reports. The total Korwa population in the United Provinces of Agra and Oudh is difficult to gather. They numbered 627 in 1901, since then the Korwas have been ignored as they number only a few hundreds. However, from incidental notices in District Gazeteers and local investigations in Korwa settlements, it may be definitely asserted that they are rapidly thinning out. The Birhors are a dying tribe. The decrease in the ranks of the Birhors during the last decade has reached the appalling figure of nearly 30%. The Todas are also faced with extinction. The Tasmanians have already paid the price of modernisation. The race has disappeared.

The causes of tribal extinction are still unknown or indefinitely known. No systematic attempt has as yet been made to explain the causes of maladaptation of the tribal stock. The Census authorities are silent about the cases of tribal depopulation. They do not consider it necessary even to attempt an explanation of the factors that lead to the disappearance of races and tribes beyond an indication of this trend. This and similar facts, however, make it all the more evident that it is imperative in the interest of science as well as for safeguarding minority interests that an ethnographic survey of the tribal population in India should again be undertaken along with the coming Census,—so that the actual position of the tribal population in India and the factors that are leading to a decrease in their ranks may be brought to light and remedies suggested.

If the rapid disappearance of the primitive tribes is one of the inevitable results of the progress of civilisation and if it is due to the change from the free and unfettered life of the jungle tribes to a so-called ordered existence or a life of degraded serfs—which have been more or less responsible for a complete change in their mental outlook, it is all the more essential that the factors of this civilisation should be analysed and some sort of protection should be provided for, in order to

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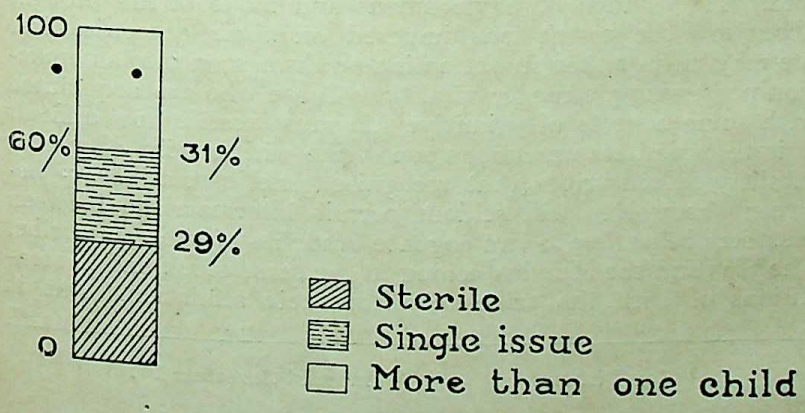
enable them to hold their own against the onslaught of foreign ideas. The factors of maladaptation are many and local or geographical conditions generally exercise a dominating influence on the social and economic life of the inhabitants. We shall have occasion to discuss this aspect of the question in detail below. Generally speaking, when the death rate gradually overtakes and exceeds the birth rate, there is a decline in the ranks. But low mortality fails to check the course of decline when the tribe or group develops a high sex ratio. In other words when the proportion of male largely exceeds the female population or when the number of males is exceedingly small compared to the females and when the disturbed balance of the sexes does not lead to polyandry or even polygyny a low mortality rate does not help the tribe to adjust itself to any appreciable change of environment. The factors that are regarded as of great significance in hastening the exit of races and tribes are imported diseases, high sex ratio, abortion, loss of ambition in life and apathy to tribal traditions and established usages. But the part of each factor of elimination in shaping the destiny of a group or tribe has proved to be a bone of contention and seldom two authorities are found to agree. To these factors may be added another, *viz.*, inbreeding which amongst the Korwas at least is not only exercising a baneful influence on their social and economic life, but is also sapping the life blood of this hardy stock. Amongst the Korwas there is practically no prohibited degrees in marriage and inbreeding has been carried to the limit. On a first hand enquiry into Korwa settlements it transpired that 29% of the marriages are sterile, about 31% of the marriages have produced single issue while the maximum number of children to a family was found to be five. The sex ratio is approximately 5 : 3; the toll of deaths due to imported diseases is also considerable and witch doctors are employed to drive epidemics from one village to another. Still births, deformity and affected brains are also noticeable.



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Due to restrictions imposed on their free and unfettered life by the forest rules, the Korwas like all other jungle tribes are not allowed the free use of the forests. Formerly they organised hunting bands and made inroads into the densest part of the forest, where besides a successful bagging of games, they could procure fruits and roots which supplied them enough nutriment. With the stoppage of this free source of food supply, they had to fall back upon the resources of their rocky land while their crude attempts at cultivation could not supply them an easy means of livelihood. Nor could they supplement their crude farming by the produce of the forest for their weapons of offence and defence, their dexterity in shooting with bows and arrows were of no avail in the thick forest as chasing or killing the wild denizens of the forest was not encouraged. Fruits and roots of the forest which offered them sustenance during frequent crop failures are only available in the densest part of the forest and the people dare not seek them for fear of ferocious animals as also of crossing the fire line demarcated by the forest guards. The rapid deforestation of the Chota-Nagpur area which has been responsible for stringent forest rules, and the consequent diminution of the supply of game and forest produce, are cited as important causes of depopulation amongst the Birhors.[1] The forest authorities foresaw this possibility for in the report of the forest administration we find "the advance of civilisation must mean either extinction or absorption into a population possessing a stronger vitality..... It is evident that with the restriction of the large areas of forest over which these tribes are wont to roam and the resulting diminution in the supply of food that the forests can afford, the formation of village communities possessing permanent cultivation must gradually ensue and though in the first instance such villages are self-sufficient even to the smallest detail of domestic requirements, yet in time many savage customs and arts no longer necessary in a settled life will entirely disappear."[2]

The possibilities indicated by the forest authorities are two-fold. The change of environment and mode of life brought about by the restrictions imposed on their otherwise free life may mean either an extinction or absorption into a population possessing a stronger vitality. Those who are acquainted with some aspects of primitive life must realise how difficult it is to assimilate an endogamous tribe with a tribe of greater vitality. Even tribes that recognise genetic relationship between themselves will seldom permit intermarriage between members belonging to two cognate branches of the same tribe. The Hos and the Mundas belong to the same stock and the traditions of both the tribes confirm their affiliation. But it

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[1] Roy-Birhors. [2] Imperial Gazetteer IV.

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is practically absurd to think of an intermarriage between members belonging to these two tribes and the council of elders of both these tribes will vehemently resent any such breach of tribal usage. Instead of any such absorption, there is an incessant tendency to fission into endogamous subdivisions and a consequent likelihood of a close inbreeding in the group, the result of which is a gradual disappearance of the tribe. True, there are cases when changes of custom, manners and traditions and the mode of life have ushered a new era of progress amongst certain section of the tribal population in India as for instance, the Polias or Rajbansis of northern India. But the Polias or Rajbansis are not in the tribal stage, nor do they represent a pure ethnic type.

They are a mixed people, the result of a miscegenation between the Mongolians and the Dravidians brought about by a contact of centuries of which history has records to show. Even if a tribe merges itself into another possessing greater vitality, what proof can we produce to show that the original elements of the weaker tribe have profited by the miscegenation and have not disappeared under the stress of more active and vital forces? Permanent absorption means extinction unless the identity or individuality of the tribes forming a mixed type is maintained. The identity or individuality expresses itself in the process of convergence which brings out clearly the distinct elements which have combined to form an uniform or homogenous type. Everywhere in the United Provinces amongst all castes and tribes there is found two distinct physical types, one resembling the Dravidian ethnic type, the other type approximating to the Indo-Aryan physical features which no doubt indicates a miscegenation between the two dominant racial types. The convergence of types becomes manifest when the mixture is between two races or groups on quite a large scale. In case of mixture of a dominant type with a dying one, the tendency is to assimilate the physical traits of the inferior type so that convergence if there be any is hardly discernible. But before any such miscegenation takes place, it is necessary that an atmosphere should be created which will make it feasible for two types to intermarry and fuse into one. The atmosphere may be created in a number of ways. This is possible when two tribes or groups possessing equal vitality or equal social status or cultural level, living in the same cultural environment mix together on equal terms. This is also possible when a conquering people settle down amongst the conquered possessing a superior culture to that of the conquerors, so that they can mix on equal terms. The muscular superiority of the one is balanced by the mental superiority of the other. As an instance of the latter may be cited the racial intermixture between the Indo-Aryans and the Dravidians. The

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Indo-Aryans when they came to India did not possess a higher culture than the Dravidian inhabitants of India. The racial miscegenation was only possible because the two races could sink their differences and meet on equal terms. The Indo-Aryan population of the United Provinces, could reach the pinnacle of cultural evolution because here on the sacred banks of the Ganges they could mix freely and on almost equal terms with another race though not possessing the same physical vitality but certainly enjoying a higher and nobler culture to which the invaders had to bow.

When a race or tribe does not merge itself into another race or tribe possessing greater vitality, yet prepares for an exit it may be taken for granted that there is something wrong in the process of adaptability. Races and tribes are constantly adapting themselves to the environment for failure to adapt means gradual elimination as has been the case with the Tasmanians. The process of adaptability includes positive as well as negative factors. A year of plentiful harvest to a starving tribe may be taken as a positive factor of adaptability while scanty production or crop failure in the case of an agricultural tribe means starvation and therefore a negative factor. Adaptability differs in different communities and in different geographical or ecological areas. Dances are favourite pastimes of the aboriginal tribes. When a tribe is free from economic stress, animated dances become a regular feature of tribal life but when games become scarce or pasture lands fail to supply forage for the cattle or crops fail, naturally enough there is a loss of vitality in tribal life consequently a loss of interest in the dances. So participation in tribal dances may be regarded as a derivative factor of adaptability for it is dependent on economic factors.

The sum total of positive and negative factors or in other words the resultant of these factors of adaptability determines the curve of the numerical strength of a given population, a tribe or a race. When negative factors preponderate the birth rate suffers a check, death rate overcomes or exceeds the birth rate and in the event of the latter, the tribe disappears. When positive factors are in excess of negative elements, the prosperity of the tribe is manifested in the excess of births over deaths and a progressively healthy and cheerful outlook on life acts as a miracle fostering a genial current of the soul which fits it more to fight the battle of life or to adjust it to any change of environment. Again, the factors of adaptability may be direct or indirect. The direct factors are mostly physical ones, indirect ones are those which result in cultural miscegenation. Both these are required for the survival of a race. The direct ones are of immediate concern to the people while indirect ones are not remote for they hasten the operation of direct factors. Physical agony, starvation or

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disease are direct factors, exploitation by the mahajan, exaction of landlords or their revenue agents, introduction of social and sexual vices by pioneers of modern civilisation are indirect factors but no less important for they affect the immediate wellbeing of the race.

When a race or tribe cannot adapt itself to a changed environment, it is apparent that something is wrong in the process of adaptability. The jungly Birhors have fallen on evil days with the gradual extension of cultivation and the greater drain on the forests from the presence of a thicker population and they are taking up settled work as landless labourers. Sometimes, they rear a scanty crop of maize or beans by burning a patch of jungle, scratching the soil and sowing on ashes. But the prospect of their becoming settled agriculturists is still remote and it is doubtful whether they will at all take to permanent cultivation before they are extinct for they hold their lives on slender terms.

To the Korwas like all other jungly tribes, the forest with its abundant possibilities has been transformed into a *terra incognita* and they have to remain content with the rocky land where they are trying hard to eke out their livelihood by the sweat of their brow. The poor breed of cattle they possess are unable to drag heavy ploughs, so miniature ploughs are used which can only scratch the soil, not to speak of any intensive attempts at furrowing. The rivers and rivulets which divide and diversify the rocky plateau do not supply them water to drink so no irrigation is possible. The average depth of water is very great and before it can be met with granite rocks have to be pierced. According to the report contained in the District Gazetteer of Mirzapur, large sums of money have been spent by the Government on sinking wells and constructing tanks and embankments mostly in the vicinity of the headquarters of Dudhi Tahasil, but these do not improve the water supply for they fail in dry seasons owing to the porosity of the soil. As pasture lands cannot be had in the vicinity of hamlets, the cattle are taken to the forest for grazing. The forest rules do not recognise the right of grazing cattle in every forest—so sometimes the cattle have to be taken miles away and they are not brought back home every evening. So the excreta also cannot be used to manure the soil. As is but natural, they scratch the ground, sow seeds and offer prayers and sacrifices to the rain god on whose bounties their existence depend. They plough their lands for two to three years at the most and then keep them fallow for say five to seven years.

The scarcity of water, the want of manure, the inhospitable nature of the soil and the crude farming cannot yield a plentiful harvest, so they are never self-sufficient as regards their supply of food. Years of continued disappointments due to

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scanty production or failure of crops, the exploitation of the mahajan or the money lender, the merciless exaction of the landlords or their revenue collecting agents, the cunning excise shopkeepers of the interior, have gradually deprived the people of every ambition in life.

The fertility rate has therefore suffered a great check and with increasing hopelessness of their future outlook it may be assumed that the curve of population will continue to sink which may eventually lead to a complete extinction of the Korwas. We are told that poverty co-exists with high birth rate. But here we find that poverty is a check to increasing birth rate. This has also been possible due to the knowledge of herbs and plants which the Korwa women possess or which their husbands have taught them.

Instances are not rare when a sort of protective administration of the tribal territories has led to favourable growth of the tribal stock. We plead for the same treatment to the Korwas and other primitive tribes of India. Crime against trees should be prevented but that should not lead to a crime against man for certainly man deserves greater attention than trees.

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The Anthropometry of the Bhuiyas of Mayurbhanj.

By Probhash Chandra Basu.

The following account is based on the anthorpometrical measurements and observations of 81 individuals taken by me during my tour in the Mayurbhanj State in January–February, 1929.

The Bhuiyas are an aboriginal group of people who have been much influenced by the Hindu civilization, so much so that Oriya has nowadays become almost their mother tongue and every phase of their manners and customs shows an enormous influence of the Brahmanic culture. But still they have preserved many archaic traits of their own and their present culture is in a stage of transition.

The majority of the individuals measured by me belong to Kumastha (tortoise), Nāg (snake), Nagesh (a kind of flower), Bhūi Ālu (sweet potato) gôtra (totem). The measurements have been taken in three places, at Baldeha, Pratappur (at a distance of about 10 miles from Baripada, the capital), Kantapar and Bangriposi (about 25 miles from Baripada). The majority of the measurements being from the last mentioned region.

The Bhuiyas are usually dark brown—only one or two individuals are light brown. The colour of the iris is black, two individuals presenting a greyish tint. The hair varies between straight and wavy, rarely curly but never wooly or frizzly.

The supraorbital ridges are moderately developed in the majority, the forehead is usually slightly retreating though it is not uncommon to find complete vertical forehead with ill-developed supraorbital ridges. The root of the nose is somewhat depressed, the nasal bridge being straight. But as a complete idea of the nose form cannot be had from the length and breadth measurements only, the nasal depth, from the subnasal point to the tip of the nose has also been measured.

The eye slits are either straight or oblique and the epicanthic folds are present in a few individuals. These with the prominent zygomatic bones, slight yellowish tinge in the complexion, suggest a submerged Mongoloid strain as suggested by Col. Dalton but denied by others.

The individuals that have been measured are all adults with their ages varying from near about 25 to 50 years.

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From an analysis of the metric data we find that—

In their Cephalic Index 34 are Dolicocephalic, 33 Mesocephalic, 12 Brachycephalic and only two Hyperbrachycephalic. The average Cephalic Index is 77 and the Standard deviation is $\mp$ 4·5.

As regards the Length-height Index 63 are Hypsicephalic and only 18 are Orthocephalic. The average Length-height index is 69 and the Standard deviation $\mp$ 6·5.

On analysing the Facial Index it is found 10 Hypereuryprosopic, 30 Euryprosopic, 24 Mesoprosopic, 14 Leptoprosopic and only 3 Hyperleptoprosopic. The average Facial Index is 84 and the Standard deviation $\mp$ 4·4.

As regards the Orbitō-nasal Index it is found that 42 are Platyopic, 16 Mesopic and only 23 Pro-opic. The average Orbito-nasal Index is 110 and the Standard deviation $\mp$ 6·5.

The Nasal Index shows 12 to be Leptorrhine, 52 Mesorrhine, 14 Platyrrhine and only 1 Hyperplatyrrhine. The average Nasal Index is 77 and the Standard deviation is $\mp$ 8·1.

As to Stature 1 Pigmy, 46 Short, 33 Medium and only 1 Tall are found. The average stature is 1577 m.m. and the Standard deviation $\mp$ 48·8.

If the Cephalic and Nasal Indices are combined we arrive at the following results :—

5	Dolicocephalic	Liptorrhine.
20	,,	Mesorrhine.
9	,,	Platyrrhine.
4	Mesocephalic	Leptorrhine.
26	,,	Mesorrhine.
3	,,	Platyrrhine.
3	Brachycephalic	Leptorrhine.
8	,,	Mesorrhine.
3	,,	Platyrrhine.

No attempt has been made here to compare the Bhuiyas with the kindred tribes of the region as adequate data on the latter have not been available. It is proposed to continue this investigation further when a comprehensive account of the physical characters of the entire group of the tribes of the locality will be attempted. The datailed measurements and observations taken by me, except some that have been mentioned before are given below:—

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Bhuiyas of Mayurbhanj.

Name.	Head Length.	Head Breadth.	Head Height.	Bigonial Diameter.	Minimum Frontal Diam.	Biorbital Breadth.	Bizygomatic Diameter.	Nasion Menton Height.	Biorbito Nasal Arc.	Nasal Length.	Nasal Breadth.	Nasal Depth.	Stature.	Interorbital Diameter.	Cephalic Index.	Nasal Index.	Altitudinal Index.	Facial Index.	Orbito Nasal Index.	Forehead.	Eye Slit.	Shape of Face.	Browridges.	Remarks.
1. Baya Naik ..	190	144	120	94	103	105	129	113	105	52	42	16	1513	..	75·7	80·7	63·1	87·6	100·0	S.R.	S.O.	Pent.	+ +	Hint of
2. Baidyadhar ..	186	143	148	94	98	105	132	111	105	48	36	21	1562	..	76·3	75·0	79·5	84·0	100·0	Ret.	St.	Pent.	+ +	Ep. fold
3. Mangru ..	187	142	131	92	99	101	135	114	125	41	38	17	1678	34	75·9	92·6	70·0	84·4	123·7	S.R.	S.O.	Pent.	+	Iris
4. Balvadra ..	188	146	122	108	99	103	134	115	125	50	35	21	1524	..	77·6	70·0	64·9	85·8	121·3	S.R.	St.	Pent.	+	Greyish.
5. Raghunath ..	192	142	136	96	106	104	132	108	110	52	43	17	1601	..	78·2	82·7	70·8	81·8	105·7	Vert	St.	Pent.	+	
6. Kasi Naik ..	200	146	127	100	109	111	133	108	115	48	41	20	1580	34	73·0	85·4	63·5	81·2	103·6	S.R.	St.	Pent.	+	
7. Bhagaban ..	180	153	142	97	106	117	132	118	125	56	37	23	1605	34	85·0	65·0	78·8	89·3	106·8	S.R.	St.	Pent.	+	
8. Ganga	185	141	121	104	98	93	127	113	120	59	43	23	1669	30	76·2	72·8	76·2	88·9	129·0	S.R.	St.	Oval.	+	
9. Mouna	187	147	140	100	109	109	143	114	120	55	41	22	1626	38	78·6	74·5	74·8	79·7	110·0	S.R.	S.O.	Pent.	+	
10. Gour	193	135	114	99	107	110	133	116	115	51	38	18	1567	34	69·9	74·9	59·0	87·2	104·5	S.R.	St.	Pent.	+	
11. Kartik	186	145	123	90	109	102	132	101	110	48	38	18	1546	29	78·0	79·1	66·1	76·5	107·8	Vert.	St.	Pent.	N. P.	
12. Pannab.. ..	175	142	118	103	108	105	132	102	120	50	36	16	1654	34	81·1	72·0	67·4	77·2	114·2	S.R.	St.	Sq. O.	+	
13. Uttam	179	138	106	99	91	99	128	111	115	59	37	19	1511	35	76·7	62·7	59·2	86·7	116·1	S.R.	S.O.	Pent.	+	
14. Ganeswar ..	179	145	123	102	95	101	130	106	115	50	42	20	1529	28	81·0	84·0	81·0	81·6	113·8	S.R.	St.	Pent.	+	
15. Udainath ..	192	140	113	95	96	104	131	111	115	51	32	17	1639	30	72·9	62·7	58·8	84·7	110·5	S.R.	St.	Pent.	+ +	
16. Sambhu.. ..	193	145	145	88	99	109	136	119	105	53	36	17	1640	32	75·1	67·9	75·1	87·5	96·3	S.R.	S.O.	Pent.	+ +	
17. Kunja	185	141	120	96	94	97	133	108	110	52	31	17	1582	33	76·2	60·0	64·8	81·2	113·4	S.R.	St.	Pent.	+	
18. Baistam ..	185	145	143	92	102	107	137	106	120	45	39	16	1592	32	78·3	87·7	77·3	77·3	112·1	S.R.	St.	Pent.	+ +	
19. Ruhia	185	133	131	95	96	90	127	107	105	48	36	19	1542	32	71·8	75·0	70·8	84·2	116·6	S.R.	S.O.	Oval.	+ +	
20. Goutam ..	177	137	138	102	93	91	127	118	110	51	37	18	1550	31	77·4	72·5	77·9	92·9	120·8	S R.	S.O.	Oval.	+ +	
21. Jagabandhu ..	183	144	177	97	94	95	130	102	105	48	36	18	1515	27	78·6	75·0	96·7	78·4	110·5	S.R.	St.	Pent.	+ +	
22. Gura ..	185	139	116	100	100	95	125	112	100	50	40	18	1649	25	75·1	80·0	62·7	89·6	105·2	Vert.	St.	Pent.	N. P.	

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BHUIYAS OF MAYURBHANJ.

	Name.	Head Length.	Head Breadth.	Head Height.	Bigonial Diameter.	Minimum Frontal Diameter.	Biorbital Diameter.	Bizygomatic Diameter.	Nasion Mentom Height.	Biorbito Nasal Arc.	Nasal Length.	Nasal Breadth.	Nasal Depth.	Stature.	Interorbital Diameter.	Cephalic Index.	Nasal Index.	Altitudinal Index.	Facial Index.	Orbito Nasal Index.	Forehead.	Eye Slit.	Shape of Face.	Browridges.	Remarks.
23.	Gourhari ..	181	143	133	101	104	105	131	111	125	50	38	20	1522	34	79·0	76·0	71·8	84·7	119·0	S.R.	St.	Pent.	+	
24.	Samma ..	172	114	155	100	95	95	127	115	102	47	39	19	1580	31	66·2	83·0	90·1	91·3	107·3	S.R.	St.	Pent.	+ +	
25.	Sudarsan ..	181	148	132	95	101	100	130	115	108	51	38	18	1518	32	81·7	74·5	72·9	88·4	108·0	S.R.	St.	Pent.	+ + +	
26.	Sukra ..	189	138	113	95	94	96	120	108	102	53	38	16	1538	31	73·0	71·7	59·7	90·0	106·2	S.R.	St.	Oval.	+ + +	
27.	Brindaban ..	183	139	132	100	103	103	129	128	115	60	40	18	1496	29	76·0	66·6	72·1	99·2	111·6	S.R.	St.	Sq. O.	N. P.	
28.	Sarna ..	181	144	126	90	98	93	130	105	110	49	39	18	1619	30	79·5	79·5	69·6	80·7	118·2	Vert.	St.	Pent.	+	
29.	Chandra ..	182	142	123	93	99	98	132	116	110	54	38	16	1580	29	78·0	70·3	67·7	87·8	112·2	Vert.	S.O.	Pent.	+ + +	
30.	Agru ..	184	136	113	94	98	98	127	107	105	49	38	19	1633	31	73·9	77·5	61·4	84·2	107·1	Vert.	St.	Pent.	+ + +	
31.	Kosa ..	195	145	123	92	103	93	128	107	105	49	34	14	1537	35	74·3	69·3	63·4	85·1	112·9	Vert.	St.	Oval.	+ + +	
32.	Gura ..	178	131	123	89	100	99	127	107	105	46	36	16	1533	30	73·6	78·2	69·1	84·2	106·2	S.R.	St.	Pent.	+ + +	
33.	Sambu ..	179	140	131	108	100	98	131	107	118	47	38	18	1566	28	78·2	80·8	73·1	81·6	120·4	S.R.	S.O.	Pent.	+ + +	
34.	Nidhi Charan ..	186	137	119	96	96	93	130	106	108	49	38	15	1559	30	73·6	77·5	63·9	81·5	116·1	S.R.	S.O.	Pent.	+	
35.	Ruhia ..	182	143	126	100	102	101	128	104	113	47	39	18	1630	30	78·5	83·0	69·2	81·2	111·8	Vert.	S.O.	Oval.	N. P.	
36.	Sona ..	183	132	117	100	95	106	133	111	115	43	39	19	1616	36	72·1	90·7	63·9	83·4	108·4	S.R.	S.O.	Pent.	+	
37.	Sonatan ..	181	135	125	106	96	102	132	112	110	45	39	18	1572	31	74·5	86·6	69·0	84·8	107·8	Vert.	S.O.	Pent.	N. P.	
38.	Ramchandra ..	167	142	127	..	96	99	130	107	105	49	36	19	1627	32	85·0	73·4	76·0	82·3	106·0	Vert.	S.O.	Pent.	+	Ep. fold present.
39.	Dasaratha ..	178	141	129	..	97	96	122	101	105	42	37	17	1530	26	79·2	88·0	72·4	82·7	109·3	S.R.	St.	Pent.	+ +	
40.	Gura ..	190	143	134	..	104	107	131	106	115	39	40	17	1572	36	75·2	102·5	70·5	80·9	107·4	Vert.	St.	Pent.	+	
41.	Madhu ..	192	139	123	..	101	107	139	119	115	53	39	19	1589	35	72·4	73·6	64·0	85·6	107·4	Vert.	St.	Oval.	N. P.	
42.	Mangru ..	194	140	122	..	103	103	133	123	115	52	39	16	1613	34	72·1	75·0	62·8	92·4	111·6	S.R.	S.O.	Pent.	+	
43.	Siva ..	180	133	121	99	80	97	129	105	100	46	41	20	1520	31	73·8	89·1	67·2	81·4	103·0	S.R.	St.	Pent.	+ +	
44.	Kamo ..	174	144	142	93	98	101	129	100	105	42	34	17	1532	28	82·1	80·9	81·6	77·5	103·9	Vert.	S.O.	Pent.	N. P.	

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Bhuiyas of Mayurbhanj

	Name.	Head Length.	Head Breadth.	Head Height.	Bigonial Diameter.	Minimum Frontal Diameter.	Biorbital Diameter.	Bizygomatic Diameter.	Nasion Menton Height.	Biorbito Nasal Arc.	Nasal Length.	Nasal Breadth.	Nasal Depth.	Stature.	Interorbital Diameter.	Cephalic Index.	Nasal Index.	Altitudinal Index.	Facial Index.	Orbito Nasal Index.	Forehead.	Eye Slit.	Shape of Face.	Browridge.	Remarks.
45.	Bhagaban ..	178	136	114	95	94	94	124	106	100	46	33	16	1572	31	76·4	71·0	64·0	85·4	106·3	Vert.	S.O.	Pent.	N. P.	
46.	Charan	185	136	114	91	99	96	126	109	100	50	35	17	1568	28	73·5	70·0	61·6	86·5	131·2	Vert.	S.O.	Oval.	N. P.	
47.	Jagabandhu ..	198	145	118	98	101	103	136	108	105	47	38	17	1576	35	73·2	80·8	59·5	79·4	101·9	S.R.	S.O.	Pent.	+ +	
48.	Bāsu	176	153	124	101	102	105	136	115	110	47	41	16	1650	29	86·9	87·2	70·4	84·5	104·7	S.R.	S.O.	Pent.	+ +	
49.	Bima	176	140	127	95	100	102	132	109	105	45	36	15	1563	29	79·5	80·0	72·1	82·5	102·9	Vert.	S.O.	Pent.	+	Ep. fold
50.	Dinabandhu ..	186	141	116	97	109	99	133	110	115	51	42	22	1538	34	75·8	82·3	62·3	82·7	116·1	Vert.	S.O.	Pent.	N. P.	present.
51.	Manmatha ..	190	148	119	99	106	96	136	112	100	51	43	15	1565	33	77·9	84·3	62·6	82·3	104·1	S.R.	S.O.	Pent.	N. P.	
52.	Charan	182	136	106	91	97	95	130	110	95	52	32	17	1521	28	74·7	61·5	58·2	84·6	100·0	S.R.	St.	Oval.	+	
53.	Budhu	180	148	135	93	101	102	137	118	110	54	36	18	1686	35	82·2	66·6	75·0	86·1	107·8	S.R.	St.	Oval.	+ +	
54.	Kalpa Taru ..	186	144	107	93	110	101	135	115	115	53	39	17	1618	36	77·4	73·6	77·4	85·1	113·8	S.R.	St.	Sq. O.	+ +	Iris
55.	Gura	181	148	133	95	103	103	131	117	110	50	44	19	1628	30	81·7	88·0	73·4	89·3	106·7	S.R.	St.	Pent.	+	Greyish
56.	Bhagirathi ..	174	139	114	100	99	102	130	108	110	54	38	19	1629	32	79·8	70·3	65·3	83·0	107·8	Ret.	S.O.	Oval.	+ +	Brown.
57.	Jagu	178	139	113	98	97	100	125	112	110	55	42	19	1592	31	78·0	76·3	63·4	89·6	110·0	Vert.	S.O.	Pent.	N. P.	
58.	Ugreswar ..	175	136	134	96	86	93	129	101	105	50	35	18	1584	32	77·7	70·0	76·5	78·3	112·9	Vert.	S.O.	Pent.	N. P.	
59.	Uddhab Das ..	179	152	132	100	99	106	137	132	115	50	38	20	1544	34	87·3	76·0	75·8	96·3	108·4	S.R.	S.O.	Pent.	+	Ep. fold
60.	Nabin	181	136	134	96	84	103	131	122	110	54	34	21	1670	29	75·1	62·9	74·0	93·1	106·7	S.R.	St.	Pent.	+	present.
61.	Sankar	195	140	110	98	90	94	128	104	105	43	39	15	1489	33	71·8	90·7	56·4	81·2	111·7	Vert.	St.	Oval.	N. P.	
62.	Mangru ..	170	139	138	107	97	94	134	94	110	43	38	17	1613	30	81·7	88·3	81·1	70·1	117·0	Vert.	S.O.	Pent.	+	
63.	Raghu	183	135	126	90	92	96	127	97	107	40	35	15	1527	32	73·7	87·5	68·8	76·3	111 4	S.R.	St.	Sq. O.	N. P.	
64.	Giridhari ..	191	141	151	100	95	97	132	118	110	55	39	18	1621	29	73·8	70·9	79·0	89·3	113·4	Vert.	S.O.	Pent.	N. P.	Ep. fold
65.	Sanatan ..	170	137	126	94	79	99	128	111	108	50	36	16	1532	30	80·6	72·0	74·1	86·7	109·0	S.R.	S.O.	Pent.	+ +	present.
66.	Gaya	175	134	109	96	80	91	126	199	105	47	34	18	1464	28	76·5	72·3	62·2	78·5	115·3	Vert.	S.O.	Pent.	+	

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Bhuiyas of Mayurbhanj.

	Name.	Head Length.	Head Breadth.	Head Height.	Bigonial Diameter.	Minimum Frontal Diameter.	Biorbital Diameter.	Bizygomatic Diameter.	Nasion Mentum Height.	Biorbito Nasal Arc.	Nasal Length.	Nasal Breadth.	Nasal Depth.	Stature.	Interorbital Diameter.	Cephalic Index.	Nasal Index.	Altitudinal Index.	Facial Index.	Orbito Nasal Index.	Forehead.	Eye Slit.	Shape of Face.	Browridges.	Remarks.
67.	Raghunath ..	191	152	130	102	103	97	139	113	110	57	39	21	1605	32	79·5	68·4	68·0	81·3	113·4	Ret.	S.O.	Oval.	+ +	
68.	Kshetra Mohan	185	138	111	95	103	96	129	109	105	51	37	19	1534	32	74·6	72·5	60·0	84·5	109·3	Vert.	S.O.	Pent.	N. P.	
69.	Lakshmi Dhar	178	135	122	105	94	96	131	117	105	53	39	18	1638	32	75·8	73·6	68·5	89·3	109·3	S.R.	S.O.	Oval.	+	
70.	Nanda Sing ..	177	136	121	97	104	95	127	116	105	57	39	16	1525	31	76·8	70·8	68·3	91·3	110·5	S.R.	S.O.	Pent.	+ +	
71.	Bhutia ..	181	135	111	96	83	96	128	102	105	43	39	16	1573	33	74·5	90·7	61·3	79·6	109·3	Vert.	S.O.	Oval.	N. P.	
72.	Mukunda ..	178	142	123	94	83	97	130	108	106	44	38	19	1663	28	79·7	86·3	61·2	83·0	109·2	S.R.	S.R.	Oval.	+	
73.	Bajra ..	195	140	141	110	94	112	135	108	125	55	41	18	1650	34	71·8	74·5	72·3	80·0	111·6	S.R.	St.	Sq. O.	N. P.	
74.	Gaya ..	187	136	135	98	100	97	135	107	110	46	39	18	1537	31	72·7	84·8	72·1	79·2	113·4	Vert	St.	Trian.	N. P.	
75.	Manglu ..	181	148	131	90	95	88	126	111	105	50	36	18	1616	23	81·7	72·0	72·3	88·0	119·3	Vert.	S.O.	Pent.	N. P.	Ep. fold present.
76.	Kanda ..	183	150	118	104	104	100	138	113	107	50	37	19	1624	30	81·9	74·0	64·4	81·8	107·0	Vert.	S.R.	Pent.	+	
77.	Bharata ..	171	139	117	111	98	98	135	111	111	52	36	15	1550	25	81·2	69·2	68·4	82·2	113·2	S.R.	St.	Pent.	N. P.	
78.	Panur ..	186	143	124	98	100	94	135	109	105	48	34	17	1560	30	76·8	70·8	66·6	80·7	111·7	Vert.	S.O.	Pent.	+	
79.	Samma ..	194	149	132	87	104	99	135	113	105	46	35	18	1584	32	76·8	76·0	68·0	83·7	106·0	Vert.	St.	Pent.	+ +	
80.	Purna ..	187	142	115	100	98	97	132	107	105	48	39	14	1516	29	75·9	81·2	61·5	81·0	108·2	Vert.	St.	Sq. O.	+ +	
81.	Ruhia ..	182	144	126	85	101	97	132	100	105	45	36	15	1540	31	79·1	80·0	69·2	75·7	108·2	Vert.	S.O.	Pent.	+ +	

N.B.—The measurements are all in millimetres.

Abbreviations used:—

Diam. = Diameter. Pent. = Pentagonal.
S.R. = Slightly rebreating. N. P. = Not prominent.
Vert. = Vertical. + = Slightly prominent.
Ret. = Rebreating + + = Moderately "
S.O. = Slightly oblique. + + + = Strongly "
St. = Straight. Ep. = Epicanthic.
Trian. = Triangular. Sq. O. = Squarish Oral.

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STATISTICAL CONSTANTS.

Name.	Head Length.	Head Breadth.	Head Height.	Bigonial Diameter.	Minimum Frontal Diam.	Biorbital Diameter.	Bizygomatic Diameter.	Nasion Menton Height.	Biorbito Nasal Arc.	Nasal Length.	Nasal Breadth.	Nasal Depth.	Stature.	Interorbital Diameter.	Cephalic Index.	Nasal Index.	Altitudinal Index.	Facial Index.	Orbito Nasal Index.
Number ..	81	81	81	76	81	81	81	81	81	81	81	81	81	77	81	81	81	81	81
Average ..	184	140	126	97	98	100	131	110	110	50	38	18	1577	31	77	77	69	84·0	110
Standard Deviation ..	∓6·7	∓5·0	∓12·5	∓5·2	∓6·6	∓5·2	∓4·0	∓6·5	∓6·5	∓4·4	∓2·6	∓·19	∓3·6	∓·20	∓4·5	∓8·1	∓6·5	∓4·4	∓6·5
*P.E. of mean ..	∓·50	∓·37	∓·93	∓·40	∓·49	∓·39	∓·29	∓·48	∓·48	∓·32	∓·19	∓·14	∓3·6	∓·20	∓·33	∓·60	∓·48	∓·32	∓·48
P.E. of Standard Deviation ..	∓·35	∓·26	∓·66	∓·27	∓·35	∓·27	∓·21	∓·34	∓·34	∓·23	∓·13	∓·10	∓2·5	∓·15	∓·23	∓·43	∓·34	∓·23	∓·34
Coefficient of Variation ..	∓3·6	∓3·5	∓100·0	∓5·3	∓6·7	∓·52	∓3·0	∓5·9	∓5·9	∓8·8	∓6·8	∓10·5	∓3·0	∓9·0	∓6·8	∓10·5	∓9·4	∓5·2	∓5·9
P.E. of Variation	∓·21	∓·27	∓10·0	∓·29	∓·35	∓·04	∓·15	∓·31	∓·31	∓·40	∓·58	∓·54	∓·17	∓·50	∓·34	∓·54	∓·47	∓·26	∓·31

*P.E.=Probable Error.

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The Satak Copper Plate Grant of King Rāma Siṃha II, of Jaintia of 1809 A.D.

By Kunja Govinda Goswami.

In February last, I was informed, at my village home at Satak, District Sylhet, that one of our neighbours, Sj. Madan Mohan Goswami had a copper plate inscription in his possession. I at once hastened to his place and saw the plate. The plate records the grant of twenty-four *kedāras* of land in two plots to one, Balarāma Goswāmi (here mentioned as Vaiṣṇavādhikārin), by King Rāma Siṃha II, (1789–1832 A.D.) of Jayantīpura (modern Jaintia) in the North Sylhet subdivision of the Sylhet district, for the worship of Rādhā and Kriṣṇa under the name of Vrajesvarī and Vrajesvara. I am told that this Balarāma, out of aversion towards the world, renounced it and went to the hilly tract of Jaintia for meditation and spiritual advancement. There he founded a temple of god *Viṣṇu* and himself became a *Sevāit* there. Hence probably, he is called a Vaiṣṇavādhikārin here. Very soon he became famous in the locality for his piety and religious austerities and people began to become his disciples. In no time, this news reached the ears of the reigning king, Rāma Siṃha II. He being attracted by the virtues of this holy man, made a grant of the land under discussion besides many other valuable donations. We learn also from the *Srihatter Itivritta* (The History of Sylhet, Part II, p. 279) by Mr. Achyuta Charan Choudhury that King Baḍa Gosāyi II (1729–1770 A.D.) of Jaintia, invited Rāma Govinda Goswami, one of the ancestors of the donee of this plate, to his capital, learnt yogāngas (eight constituents or parts of the yōga) from him and gave much wealth in the shape of *Guru dakṣiṇā* (preceptor's fee). So we see that there had been a religious influence of the family of Balarāma upon the royal family of Jaintia for a long time, and this grant also bears testimony to this fact. The present holder of the grant, Sj. Madam Mohan Goswami, is a descendant of the original donee through his brother's line and is still held in high esteem both by the people and the Rājā at Jaintia whenever he goes there. The temple is maintained even now and worship of the deities is carried on by an appointed *Sevāit* who manages the affairs there from the income of the property of the temple.

The plate roughly measures 7″×4″. The inscription opens at the top with the invocatory line "*namo Vrajesvarāya*" preceeded by a symbol which seems to be a very late form of the symbol representing *oṃ* according to Hoernle (*Intro. Bower MSS.*

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In. Ant. reprint, page 22) and Fleet (*Corp. Ins. Ind.*, page 46, n 3) but *Siddhirastu* or *Siddham* according to N. K. Bhattasāli, supported by Krishna Sastri (*Ep. Ind.*, Vol. XVII, p. 352). This symbol is called *ānji* by the older generation in Bengal. Curiously enough, this sign precedes also the right hand side line of the inscription under discussion. Just below the invocatory line, is engraved the royal seal representing a jumping lion in the midst of a roughly shaped circle. Similar seals with slight variations were now and then used by the Kings of this place. This statement will find corroboration if we compare some other inscriptions of the Jaintia Kings, edited by Dr. K. M. Gupta (*vide* (i) *J.A.S.B.*, 1922, p. 73 f., (ii) *ibid.*, 1923, pp. 323 f., (iii) *ibid.*, 1923, pp. 331 f.).

The plate is in a good state of preservation and every letter is distinct and legible. It contains seventeen lines besides the invocatory top line and two side lines—one to the right-hand side of the plate and the other to the left in the upper margin.

The characters are well shaped Bengali with some peculiarities. The language is Sanskrit prose throughout with the exception of the words *Kitāvat* (derived from Arabic and means writing of) occurring on the left hand side, and *Sahi* (probably Perso-Arabic and here perhaps means "signed by,") on the left hand side.

There are a few orthographical inaccuracies due to ignorance and carelessness of the scribe; *e.g.* (i) in some places *s* (স) has been used for *ś* (শ), viz. *saptadasa-sata* for *sapta-daśa-śata* (line 8), *disi* for *diśi* (line 10) and *vimsati* for *vimśati* (line 17), (ii) *datvā* for *dattā* (line 9), (iii) *sīmāvacchinvā* for *Sīmāvacchinnā* (line 16). The use of the word *livi* (document) (line 17) is peculiar here. Although both the forms *livi* and *lipi* are correct according to Sanskrit dictionaries, the former is hardly met with in Sanskrit books. Another point we should note here. There is no distinction in the use of *b* and *v* in Bengali, either in writing or in pronunciation. The former is rather frequently used in place of the latter. This observation holds good for the present inscription also. But I have given *v* in its proper places in my transliteration without giving the Bengali *b* first and then changing it to the correct form *v* for the sake of convenience.

Early mention of the tract of Jaintia is found in the Paurānic and Tāntric literature as containing one of the famous shrines sacred to Durgā. "It was known as Nārīrājya, mentioned in Jaimini's Mahābhārata," says Mr. Achyuta Charan Choudhury in his *Srihatter Itivritta* (*History of Sylhet*), Part I, Sec. IV, Ch. I. He being supported by MM. Padmanath Vidyavinoda (*vide Ind. His. Quarterly*, Vol III, No. 4, pp. 848-49) throws a ray of light on a mediæval king of Jaintia by stating that the famous Kāvya, Rāghava Pāndavīya of Kavirāja was composed during the reign of King Kāmadeva of Jayantiāpura in the 11th century A.D. The book itself does not contain any reference to a

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definite date and so scholars are not at one with regard to this point. But from the internal evidence we learn that this poetical work was composed by Kavirāja during the reign of Kāmadeva in the city of Jayantiāpura (Canto I, verse 25). And Mr. Choudhury and Mahāmahopādhyāya Vidyāvinoda are inclined to identify this Jayantiāpura with modern Jaintia of the Sylhet district.

According to tradition the ancient rulers of the Jaintia plains were Brahmins by caste. They ruled the region for several generations, and we do not exactly know how they met with their fall. But this much we learn from Sir E. Gait that a group of the Khasi tribes called the Syntengs inhabited and ruled the hilly part, namely, the Jaintia Hills for a long time ; and after the fall of the traditional Hindu Kings of the Jaintia plains, a scion of this tribe, named Parvat Ray took possession of the plains about 1500 A.D. (*History of Assam* by Sir E. Gait, New Edition, page 261). After that this small principality had to pass through successive invasions of the Kochas, the Kacharis, and the Āhoms. In spite of these repeated attacks the Synteng line could maintain its own independence for more than three centuries till at last the kingdom was annexed to the British Empire in 1835 A.D. Gait supposes from the nomenclature of the founder of the dynasty and his successors that from this time forward they began to feel gradually the influence of the Hindu religion and finally identified themselves with it in its Tantric form of worship. The Kings with certain laxity in matter of food and drink became champions of Śakti worship in that part of the country ; and the holy shrines at Jaintia as also at Fāljur bear sufficient evidence of it. Although the rulers belonged mainly to the Tantric sect, they were patrons of all other branches of the Hindu religion. This statement will be borne out by the fact that Mahādevī *Kāsāsati*, wife of *Baḍa Gosāyi*, made grants of land to the gods *Śiva*, *Jagannātha*, *Vāsudeva*, and *Bhūdhara* during the reign of Rāma Simha II, who is the donor of the plate under review, in the Śaka year 1725 (=1803 A.D.) (*J.A.S.B.*, 1923, pp. 323–27). That this Rāma Simha was also a devotee of Durgā and Śiva is set forth in his Dhupi Copper plate grant of the Śaka year 1720 (=1798 A.D.) (*J.A.S.B.*, 1922, p. 73). The present plate shows that he had reverence for the Vaiṣṇava deities Vrajeswara and Vrajeswarī also. Similarly, instances from Epigraphic and other sources can be multiplied in favour of our assertion. Researches of scholars are now bringing to light many inscriptions which among other things show that the princes of this line have always shown religious toleration. Rāma Simha II has been taken by Gait to be the twentieth king in descent from Parbat Ray and his period has been fixed at from 1789 A.D. to 1832 A.D. He was the nephew of his predecessor Vijaya-Nārāyana. It is also important to note here that though the rulers became Hinduised,

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society is still matriarchal and the throne passes to the nephew (sister's son) and not to his son after the death of the ruling king.

The plate was issued on the 23rd day of Māgha of the Śaka year 1731 (=which corresponds to February, 1809 A.D.).

Reading of the Plate.

Oṃ[1] *Namo Vrajesvarāya.*

1 ekatriṃsadadhika-saptadasa-sata[2]-śakābde Śrī-
2 maṭṭjayantīpura-purandara-Śrīla Śrī Rāma ⌘
3 Siṃha nṛpavareṇa Gosāinapurākhya grāmā-
4 ntargata sutāragrāmāntagatayoś-catur-viṃśa-
5 ti kedāra parimitā bhūmiḥ khandadvayena
6 Śrīmad Vrajeśvarī-Vraṭeśvarayor-arcanārthaṃ
7 Vāṇī vaiṣṇava santataye Śrī Balarāma Vaiṣṇavā-
8 dhikāriṇe datvā.[3] Tat prathama khandasya pū-
9 rvva disi[4] mahiharanānākhya bhūḥ, tat paścā-
10 t gocaraḥpanthāḥ taduttare āmira-ghara-
11 nākhya vātikāyāḥ panthāḥ taddakṣiṇe gu-
12 lākhya bhūryyāvat tadvitīya[5]-khandasya pūrvva-
13 disi[6] bhogākhārākhya bhūḥ, tata[7] paścāt
14 naktinānākhya bhūḥ taduttare mahīharanā
15 nākhya bhūḥ dakṣiṇepyevaṃ itthaṃ catuḥ
16 sīmāvachinvā[8] bhūmiḥ māghasya trayaviṃ-
17 sati[9] divasīyā libir-iti.

On the left hand side :—

Kitāvat Śrī Rāma Maṭundhāra.

On the right hand side :—

Sahi Śrī Viṭaya Siṃ Senāpati.

English translation.

Oṃ (expressed by a symbol)! Salutation to Vrajeswara.

In the Saka year *seventeen hundred* increased *by thirty-one*, —land, measuring *twenty-four Kedāras*[10] in two plots (included)

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[1] Expressed by a symbol. [2] Read ekatriṃśadadhika-saptadaśa śata. [3] Read dattā. [4] Read diśi. [5] Read taddvitīya. [6] Read diśi. [7] Read tataḥ. [8] Read Sīmāvacchinnā. [9] Read—viṃśati.

Notes to the translation.

[10] In Jaintia as in other parts of the Sylhet district the following land-measurement is in vogue :—

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in the villages of *Gosāinpur*[1] and *Sulāra*[2] has been granted by the great King *Rām Simha* (who flourished) like Purandara[3] (Indra) in the city of *Jayantī* (mod. *Jaintia*) to *Balarāma Vaiṣṇavādhikārin*, a descendant of Vāni (who is) the devotee of god Viṣṇu, for the worship of the deities, Vrajeswarī and Vrajeswara.

Now the land is bounded on four sides as follows: to the east of the first plot lies the land, called the Mahīharanana;[4] to the west the path used by the cattle; to the north the path which leads to the house, called Āmiragharana; to the south as far as the land called the gula.[5] Now to the east of the second plot lies the land called the bhogākhāra, to the west the land called the Naktināna, to the north the land called the Mahīharana, to the south the same.

The document is written on the *twenty-third day of the month of Māgha.*

---

3 krāntis	=1	kaḍā
4 kaḍās	=1	gaṇḍā
20 gaṇḍās	=1	paṇa
4 paṇas	=1	rekha
4 rekhas	=1	yasti or jasti
7 yasti	=1	poā
4 poās	=1	kedāra, kera, keyāra, kiyāra
12 kedāras	=1	hāla or hala
	=10½	bighās
	=about 3½	acres.

[1] and [2] these villages are still existing and are still known by their former respective names.

[3] The Kings of Jaintiā used the title, Jayantipura purandara in their coins and inscriptions. (*i*) cf. Jaintiapur Copper Plate Inscription of Baḍa Gosāyi, line 3. *J.A.S.B.*, 1923, p. 332. (*ii*) A coin from Jaintipur, *ibid.*, p. 335. (*iii*).

[4] Mahihara, I am told by an educated gentleman of Jaintia, means a surveyor. But I cannot understand what the portion *nāna* in Mahiharanānākhya, and Naktinānākhya actually means. My authority also could not throw any light on that point.

[5] Gula, in some parts of Sylhet, stands for a plain which is surrounded almost on all sides by hillocks.

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Thucydides II. 13.

A Possible Explanation of Certain Difficulties.

By K. ZACHARIAH.

Thucydides has put into the mouth of Pericles a sketch of the financial position of Athens at the beginning of the Peloponnesian War, which runs thus:—'Apart from other sources of income, an average revenue of 600 talents of silver was drawn from the tribute of the allies; and there were still 6,000 talents of coined silver in the Acropolis, out of 9,700 that had once been there, from which the money had been taken for the porch of the Acropolis, the other public buildings and for Potidæa. This did not include the uncoined gold and silver in public and private offerings, the sacred vessels for the processions and games, the Persian spoils and similar resources to the amount of 500 talents. To this he added the treasures of the other temples. These were by no means inconsiderable, and might fairly be used. Nay, if they were ever absolutely driven to it, they might even take the gold ornaments of Athena herself; for the statue contained 40 talents of pure gold and it was all removable. This might be used for self-preservation but all of it must be restored. Such was their financial position—surely a satisfactory one.' Some[1] of these assertions are perplexing and on the basis of such information as we possess from other sources, chiefly inscriptions, have, in fact, proved impossible to confirm or justify.

The three main points in Thucydides' account, with which we are concerned, are these: (1) in 431, there were 6,000 T of coined silver and 500 T of uncoined gold and silver in the Acropolis, besides the treasures of the other temples; (2) at one time, there had been 9,700 T in the Acropolis, but a large part of it had been spent on the Propylæa and other public buildings and for the operations round Potidæa; (3) the tribute from the allies brought in on the average 600 T a year.

The first of these statements does not present much difficulty; and it is confirmed generally by the epigraphic evidence. We have, fortunately, the accounts of the logistai containing the totals of the sums borrowed by the State from the temples during the years, 433/2—423/2.[2] Athena Polias, by far the largest creditor, lent over 4,001 T between 433/2 and 427/6 and

[1] Thuc. II. 13.
[2] Inscriptiones Graecæ (editio minor) =I. G². I, 324.

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over 747 T between 426/5 and 423/2. The period, be it noted, begins before 431 and the sums include the loans for the expeditions to Corcyra and the earlier operations against Potidæa; on the other hand, the period ends a year before the Peace of Nicias and the expenses of the last campaign in Thrace are not reckoned. Roughly, we may conclude that the State borrowed about 5,000 T from Athena Polias, that is, practically the whole of the available reserve, as 1,000 T had been set apart by decree for an extreme emergency.[1] Far the larger proportion of this amount was borrowed in the first four or five years of the war and the rapid exhaustion of the reserve is both the explanation and the justification for the imposition of the eisphora and for Cleon's drastic re-assessment of the tribute. Without these expedients, especially the latter, Athens would have been bankrupt long before 421. It is very unlikely that there was any balance to pay into the reserve during any year of the war and in 421 the treasury probably contained little more than the final reserve of 1,000 T. An inscription, however, records the existence of 3,000 T in 416/5.[2] Between 421 and 416, 2,000 T, more or less, were thus added to the reserve. This is not improbable, even though there was a considerable reduction of the tribute in the assessment of 421, as West has shown,[3] and although there is evidence of small borrowings in 418/7 and 417/6.[4]

The statement of Thucydides about the presence of 6,000 T in the Acropolis in 431 may, therefore, be accepted.

The second assertion is, however, not so easily credible. As it stands, the passage implies that 3,700 T had been spent in the years immediately preceding—the Propylæa are mentioned as one of the items of expenditure, but the Parthenon is not mentioned, and we cannot believe that it is included among 'the other public buildings'; the siege of Potidæa is mentioned, but not the siege of Samos. The language of Thucydides suggests that the maximum of 9,700 T was reached about 435 or in the one or two years before or after. But we know that the operations round Potidæa cost altogether only 2,000 T,[5] of which the greater part must have been spent after 431; and, while we have no accurate figures for the expenses of the Propylæa, such evidence as exists suggests a total of a few hundred rather than a few thousand talents.[6] The assumption that 3,700 T was spent from the reserve (not taking into

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[1] Thuc. II. 24. [2] I. G^2. I, 99.
[3] *Amer. Jour. Arch.*, 1925, pp. 135–151.
[4] I. G^2. I, 302. [5] Thuc. II. 70.
[6] The statement of Heliodorus that the Propylæa cost 2,012 T cannot be accepted in view of what we know of building costs. Beloch (*Gr. Gesch.* II, 2, 336) thinks it could not have cost more than 2—300 T. Cavaignac (*L'histoire finaneière d'Athènes au Ve siècle.* 102) suggests an expenditure of 400 T.

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account the annual revenue at all) for the purpose which Thucydides mentions is inadmissible.

It is difficult to believe, then, that Athens had 9,700 T in the reserve about 435. Nor is it possible to discover any earlier date at which we can reasonably assume the existence of this large sum. No year will serve after the conclusion of the Samian War in 439, because the years following were surplus years, during which the Samian indemnity was being received in instalments and there must have been annual balances from the tribute of the empire. Generally speaking, the period between the transfer of the treasury to Athens and the Samian revolt was also a period of surplus budgets. The expenses of the not very protracted expeditions and of the Parthenon must have been far less than the 5-6,000 T which were paid in as tribute during these years. The reserve, therefore, probably reached its maximum in 441. But the maximum could scarcely have been as high as 9,700 T, unless we assume either the existence of several thousand talents at Delos at the time of the transfer of the treasury to Athens or the possession of great wealth by Athens herself derived from other sources—the probabilities are against either hypothesis.[1] On the other hand, if there were 9,700 T in 441, it is impossible to explain how the reserve dwindled down to 6,000 T in 431. The only extraordinary expenses of any magnitude during these ten years were the cost of the Samian siege, the expeditions to Corcyra and to Potidæa, and the buildings, the Parthenon partly and the Propylæa entirely. Against them we have to set the tribute, which by itself was probably sufficient to meet all these expenses, and several instalments of the Samian indemnity. The conclusion appears inevitable that there never were 9,700 T at one time in the reserve.

If this argument is valid, there are only two possible alternative explanations, one or the other of which historians have been obliged to accept. Either our text is corrupt or Thucydides fell into confusion. A summary of the views of three prominent writers on the subject will illustrate these alternatives.

Cavaignac suggests a theory of textual interpolation. He relies on one of the scholia on Aristophanes, which says that there always were 6,000 T of coined silver on the Acropolis, of which the greater part remained, about 300 T having been spent on the Propylæa and other buildings and for the siege of Potidæa; and he suggests that a copyist, who knew the

[1] The figures of Diodorus, 8,000 and 10,000 T, are worthless. Beloch (*Gr. Gesch.* II, 2, 329) thinks there were 3-3,500 T at the time of the transfer. Cavaignac (*Hist. Fin.* 69) suggests 3,000 T. Ed. Meyer (*Forschungen* II, 126) ascribes to Athena large revenues and a great hoard of her own; but Beloch's and Cavaignac's criticism of this theory seems sound.

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tradition of 10,000 T, made a slight alteration so as to make the passage mean that there were still 6,000 T in the Acropolis, the maximum having been 10,000 T less 300 T, on which one had drawn for the Propylæa and other buildings and for the siege of Potidæa. Thus we have the figure of 9,700 T in our existing MSS. of Thucydides.[1] The figure, 10,000 T, was certainly current as an estimate of the resources of Athens at their highest; we have mention of it in a fragment of Isocrates as well as in Diodorus. Diodorus says that the treasure brought from Delos, gathered from the common contributions of the cities, amounted to 10,000 T; but 4,000 of them were spent in the building of the Propylæa or citadel and in the siege at Potidæa. 6,000 T remained, as in Thucydides.

This is a possible solution, but hardly probable It relieves Thucydides of the responsibility of error with regard to the 9,700 T, an amount which, as I have tried to show, the treasury could not have possessed at any one time; but it does not touch the equally difficult problem of the 600 T of tribute. Nor is there any direct evidence for textual corruption. Our MSS. of Thucydides have no variant readings in this passage. And, as Beloch points out,[2] the corruption is more likely to be in the scholium than in the extant text of Thucydides.

Beloch concludes by the remark that here we have an instructive example of the result of the attempt to maintain the authority of Thucydides at all cost. His own opinion is that Thucydides made a mistake; he added to the sums in the treasury in 431 the whole cost of the siege of Potidæa (2,400 T) and the total expenses to the state of the buildings on the Acropolis (1,300 T).[3]

Ed. Meyer's explanation is, in some respects, similar. The 3,700 T, he argues, must have been spent mainly on the Propylæa and other buildings and only in small part on the expeditions. The reserve must therefore have reached its maximum before the commencement of the Propylæa in 437, that is, before the 3,000 T which are mentioned in the decree of Callias had been fully paid in. But, obviously, this cannot be right. What Thucydides did was to reckon this payment as already complete. He is assessing the financial resources Athens had at her disposal at the highest point of her power; it was irrelevant to his purpose that the whole sum was never together in the Acropolis and that by the time the last instalments of the 3,000 T had been received in 434 already considerable sums had been paid out again for expenses.[4]

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[1] Cavaignac, *Hist. Fin.*, 107–111.
[2] *Gr. Gesch.*, II, 2, 341.
[3] *Ibid.*, 342.
[4] Meyer, *Forsch.*, II, 119.

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It will be noticed that this argument rests on the assumption that the decree of Callias was passed in the year 434. On this decree hang many difficult problems of Athenian financial history with which I cannot now deal; it need only be said that the weight of opinion seems to be in favour of an early date like 434 for this decree rather than of a later date like 418, which is maintained by Beloch.[1]

Let us turn now to the third statement of Thucydides, that the average annual income from the tribute was 600 T. If it is possible that the 9,700 T is the emendation of a copyist—and this is the more easily conceivable as the item is contained in a parenthesis—the same explanation will not cover the 600 T. That the statement existed in early Mss. of Thucydides is clear from Plutarch's quotation of it in his life of Aristides.[2] But that it caused perplexity is also clear from the fact that in the parallel and probably dependent passage in Diodorus the income from the tribute at the beginning of the war is estimated at 460 T, the traditional figure.[3]

Fortunately, we have at this point the direct evidence of inscriptions to check Thucydides. Numerous fragments have been discovered of the stelae on which was inscribed, year by year, the amount of the tribute paid by the allies beginning with 454, or rather, of the aparche or sixtieth part of the tribute paid to Athena. Attempts have been made to reconstitute the lists, but the text in the first edition of the Corpus was imperfect and the calculations made on the basis of that text, notably by Pedroli and Cavaignac, are therefore unreliable and generally much too high. The recent Editio Minor has a much more satisfactory text, which again has been greatly improved in the last four or five years by the thorough and scientific investigations of West and Meritt.[4] Thanks to them, it is now possible to work out, within a comparatively small margin of error, the amount of the actual tribute for many years. But when we do this, we are at once struck by the extraordinary fact that in no year before the war does the actual tribute attain to the Aristidean norm of 460 T. In the first assessment period, 454/3-451/0, the difference is not great; but, thereafter, the total falls rapidly. Dr. Meritt has kindly informed me of some of his results, which agree closely with my own calculations. In 444/3 the amount collected was only 376 T and some drachmae. Between 443 and 439, it averages within a few talents of 395. In the re-assess-

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[1] cf. Kolbe: *Das Kalliasdekret* (*Sitz. Preuss. Akad.*, 1927, XXVIII).
[2] Plut. Arist., 24. [3] Diod., XII, 41.
[4] *Harvard Studies in Class. Philol.* XXXVII. 55–98; XXXVIII. 21–73; *Amer. Jour. Philol.*, XLVII, 171–6; *Trans. Amer. Philol. Assoc.*, LVI, 252–267; *Amer. Jour. Arch.*, XXX, 137–149; XXXI, 180–185, etc.

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ment of 438 some increase was made, but there is no sign of any general or large increase in the next period, 434/3-431/0. The lists for 433/2 and 432/1 have, in large measure, been reconstituted,[1] and we can form a fairly accurate estimate of the income from the tribute during these years. The gaps are too large to ensure absolute accuracy; and it is possible that a more detailed and careful analysis than I have either skill or patience for may reach results a little different. But the margin of error is comparatively small. The tribute received in 433/2 was about 386 T; in 432/1 only about 348 T. These figures are far removed from Thucydides' 600 T.

Various explanations of this discrepancy have been suggested. Cavaignac asserts that the tribute was raised in the re-assessment of 439 and again in 435 and 431 and regards Thucydides' figure as 'a theoretic total.[2] But, apart from the fact that the assessment was revised in 438 and 434 (not in 439 and 435),[3] the lists as revised by West and Meritt show little trace of any general increase; and it is unlikely that even the theoretic total could have amounted to anything like 600 T. In fact, Cavaignac's estimates of the income from the tribute are always too high. Mr. Tod, while admitting that the quota lists show that the words of Thucydides cannot be taken literally, suggests that 'they may correctly summarise the external revenue of the state.'[4] There were other sources of income like the obscure dekate or tenth alluded to in I. G^2. I, 91. Busolt long ago put forward the suggestion that the instalments of the Samian indemnity were included in the 600 T; but this is not probable as the indemnity was not a regular and permanent source of income. None of these explanations meets the real difficulty, which is that while Thucydides says that the allies paid 600 T of tribute annually we know that the actual receipts from the tribute did not amount to two-thirds of that sum.

Dr Meritt indicates two possibilities.[5] We may have here an instance of haplography: ἑξακοσίων for ἑξ [ήκοντα καὶ τετρ]ακοσίων. But this mistake, if it occurred, must have occurred before the time of Plutarch, who quotes Thucydides' 600 T. The other possibility is that when our authorities mention the amount of the tribute they include both ships and cash payments. On this view, the 460 T of the original Aristidean assessment and the 600 T of Thucydides represent the expenses of the ships contributed by the non-tributary allies as well

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[1] I.G^2. I, 212, 213. *Harvard Stud. Class. Philol.*, XXXVIII, plates 11 and 12.

[2] Cavaignac, *Hist. Fin.*, 111.

[3] Meritt in *Amer. Jour. Arch.*, XXIX, 292-8; West and Meritt, *ib.*, 434-439.

[4] *Camb. Anc. Hist*, V, 28-9.

[5] In a letter.

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as the money contributions of the tributary allies. This would solve the serious difficulty that thirty years after the original assessment, when many new cities had been enrolled in the empire and many autonomous allies had been reduced to the status of tributary subjects, the actual tribute received was considerably less than 460 T. But in 431 only Chios and the cities of Lesbos supplied ships; the money assessment had not been greatly increased; and it is difficult to see how the total could have reached 600 T. Even wealthy states like Thasos and Aegina only paid 30 T; and it is improbable that Chios and Lesbos between them contributed ships equal to 200 T. The language of our literary authorities, again, indicates that the assessment was a cash assessment. We can scarcely assume that the 600 T included ships as well.

Another explanation is possible, which, as far as I am aware, has not yet been suggested. The *quota* list contains the names of such cities only as paid tribute in any particular year; but a city might be a defaulter or be excused for one reason or another; and the lists therefore are not identical even within one assessment period. But the assessment list had a wider scope. It is true that no *assessment* lists previous to 425 have come down to us. But they included the names of all cities which regularly paid tribute; and it is probable that they contained the names of all states which had ever belonged to the empire, even though they had long ceased to pay tribute, and perhaps the names of some which had never belonged to the empire at all. Athenian policy in this respect was like that of the Great King,[1] it was most reluctant to recognise defections. The Lycian and many of the Carian towns had long since seceded,[2] but in the early years of the Peloponnesian War Athens sent expeditions to collect tribute from them.[3] Cleon's assessment list of 425 was, to judge from the surviving fragments, a document which included the names of tributaries old, present and prospective.[4] The earlier lists probably shared the same character, if in smaller measure. It follows that the assessment total must have been considerably larger than the actual total. It is possible that Pericles had the former in mind and it may have reached 600 T. But my calculations on this basis do not yield a total of more than 500 T.

To summarise: none of the suggested explanations of these two statements of Thucydides is really satisfactory. The chance of an interpolation or corruption of the text is slight. The alternative possibility is that Thucydides made a mistake.

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[1] Thuc. VIII. 5.

[2] The Lycian towns appear only in the list of 446-5, I.G^2., I, 199. After 440, many of the Carian towns fell away and in 438 that district was amalgamated with Ionia.

[3] Thuc. II. 69, III. 19. [4] I.G^2., I. 63.

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Historians of repute have been obliged to accept that alternative; and I shall proceed on the same assumption.

If Thucydides made a mistake, can we explain how he came to make it? I suggest that it is the result of a misreading of the inscriptions I. G^2., I, 91/92, which were inscribed on the two sides of the same stone. One of these is the decree of Callias, already referred to.

In these decrees, for which (as has been said) the generally accepted date is 434, there are two statements which are relevant to our purpose. The completion of a payment of 3,000 T to Athena is mentioned and 200 T are set apart for repayment of the debts to the other gods. It is also decreed that 10 T a year should be spent on the buildings of the Acropolis till the work is finished.

The inscriptions which contain the building accounts of the Propylæa clearly state that the Hellenotamiai contributed a mina per talent, that is, a sixtieth of the annual tribute; the actual figures have unfortunately perished.[1] The same rule probably applied to the Parthenon; and we know that in 444/3 the Hellenotamiai contributed to its expenses a sum amounting in all probability to 37,675 dr. 5 ob.[2] The tribute for the year must, therefore, have been just over 376 T, which agrees with the result of calculations based on the quota list. This, then, was the regular practice. In I. G^2., I, 92, a definite sum of 10 T was set apart for the buildings. Instead of the exact sixtieth, a round sum is assigned. It was very natural for Thucydides to assume that the 10 T represented a sixtieth of the average tribute. The deduction that the tribute averaged 600 T was wrong, at any rate of the actual receipts, but it is intelligible.

Again, at the outbreak of the war, we are told that in the Acropolis there were 6,000 T of coined silver in the reserve and 500 T of bullion. But, shortly before, 3,000 T had been paid to Athena by the state and 200 T to the other gods. If we add all these amounts, together we reach the precise total of 9,700 T, which is said to have been the maximum amount of the reserve. It is generally held that Athena and the other gods were the bankers of the state and that the state had no reserve apart from the treasure of Athena herself. But Thucydides, estimating the maximum resources of the state, added the 3,200 T to the 6,500. If we knew more about the Athenian system of finance this might prove more intelligible than it now appears.

Thus we have a complete and natural explanation of the two mistakes (if they are mistakes) of Thucydides. We should not forget that Thucydides did not pay much attention to problems of finance. He does not mention two of the most

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[1] I.G^2., I, 364, 365, 366.

[2] I.G^2., I, 342. The first four figures have not been preserved and have been wrongly restored in the ed. min.

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significant events in Athenian financial history, the decree of Callias and Cleon's 'doubling' of the tribute in 425. He does not tell us how much money was brought from Delos at the time of the transfer of the federal treasury. Rarely does he mention any figures at all; and they are generally round figures.[1] Let us remember also that for twenty years after 424 he was an exile from Athens. His mistakes will not then seem altogether incompatible with that scrupulous conscientiousness which is his avowed principle and general characteristic.

[1] Thuc. II. 70, 97, III. 19.

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Geophilid Centipedes from the bed of the Cooum River (Madras).

By Bonavis Bonnell.

Introduction.

Generally Geophilids are obtained from under stones and in loose soil. One form in particular was obtained in good numbers from soft moist soil along with Polychaet worms of the genera *Lycastis* and *Marphysa*. This is a peculiar habitat for a centipede. In 1887, Dr. Latzel of Vienna identified a marine specimen discovered by Mr. J. Sinel in Jersey to be *Geophilus submaritima*. (*Nature*, Dec. 1889, p. 104.) Lydekker mentions that *Linotenia maritima* and *Schendyla submarina* have been obtained from the shores of Western Europe beneath stones at low water mark. (*Royal Natural History*, 1896, Vol. 6, p. 208.) Recently, *Pectiniunguis americanus* has also been recorded to have a strictly littoral habitat, occurring under sea-weed, drift-wood, etc., on the coasts of the gulf of Mexico including Florida, and on the coasts of lower California (R. V. Chamberlin in *Annals of Entomological Society of America*, Vol. 8, No. 3, 1920). The present paper describes the forms and discusses the habits and peculiarities of those obtained in the mouth of the river Cooum in Madras where the water is brackish.

The river Cooum is shallow at its mouth and for the greater part of the year the bar is closed preventing the emptying of the river into the sea. Numerous small patches of land jut out of the water here and there in the course of the bed of the river being covered only during flood and during high tide when the bar is open.

Localities.[1]

(1) About the end of July 1928, a few specimens were collected from a piece of land in the bed of the Cooum surrounded by water not less than 2½ feet deep on all sides and from ten to twelve feet wide. This bit of land which is situated in the Southern arm of the Cooum between the Gymkhana and the Government House is frequented by fishermen, who collect Polychaet worms of the Genera *Marphysa* and *Lycastis*. The forms were obtained when search was made for *Lycastis* and the extremely fine specimens lay coiled within moist loose soft mud just as these Polychaets do. Although these forms differed

[1] See map appended.

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from the fleshy red colour of *Lycastis* and were of a pale brownish yellow colour, they were taken to be young forms of *Lycastis* with the colour yet to be developed. One fact, however, which was noted at the time was the quickness with which they took cover. The lens and the microscope in the laboratory revealed them to be Centipedes belonging to the Geophilomorpha.

(2) On subsequent occasions they were obtained from heaps of soil peeping out of water from the bed of the Cooum at a point east of the Islandground and towards the Napier bridge. The heaps themselves were piled by fishermen digging for *Marphysa*. That, nearest to the shore was about three feet away and the others were separated by intervals of two or three feet more. In the superficial layers of these heaps Centipedes were found coiled comfortably showing practically no attempt to escape or leave the place and along with these certain Forficulids which were seen to run on the water and cross from one mound to another were obtained.

(3) It had recently been decided by the Madras Corporation to flood the Cooum periodically with water pumped in from the sea. The operation began for the first time in the end of July and since then the mounds and the piece of land in the bed of the Cooum have been submerged becoming visible only occasionally for a few hours at a time. When the mounds are thus exposed to view no trace of these Centipedes can be found. On the assumption that they had migrated to the shore, excavations were made on the shore between the minimum and maximum water levels. At first this appeared an unsuccessful attempt, but later it was discovered that they lived in the very loose sand of crab burrows along with Amphipods and Isopods. The burrows were a few days old. It is probable that these Geophilids move about during nights in search of food and occupy heaps at the mouth of crab burrows expecting to find food from the remnants of the crab's morsel and also shelter. Pocock mentions that *Linotenia maritima* was found in company with hosts of scuttling woodlice and hopping sand shrimps (*Zoologist*, 1900, ser. 4. 4. p. 484) similar to what was observed in the present case.

Problems.

The questions to be solved are whether the Geophilids were obtained from the first and second locality by mere accident or whether they represent their natural habitat. If the latter whether there are any peculiarities in structure which enable them to cross water and to withstand submergence for short periods. The theory of accidental occurrence does not seem to be tenable for we should have to account for their occurrence in good numbers in these places and why out of several specimens

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found on land this particular form should be unfortunate enough to be stranded is the problem under investigation.

Lydekkar mentions that Geophilids subsist almost wholly on earthworms. No earthworms were available in the first and second locality but Polychaets were obtained and it is highly probable that these centipedes have acquired a taste for Polychaet worms and get to these places in search of them.

It has also been stated by Lydekker that forms typically terrestrial can withstand immersion in sea water for many hours in fresh water from one to two weeks. This statement was verified by experiments and how this exactly occurs is what this paper intends to set forth.

Experiments.[1]

A thin glass beaker was filled completely with fresh water and inverted into a dish containing water. Care was taken to see that there was no bubble at the top. A specimen was then slowly inserted under the beaker. As it was being submerged it collected a bubble of air by curving its posterior extremity and held it on its dorsal surface as it rose to the top of the beaker. The stigmata of the segments are dorso-lateral in position, and possibly the last few stigmata get their supply of air from this store. The bubble of air did not burst but very slowly decreased in size. In all its several movements in the water, in an alternate extension and coiling of the body, the posterior loop was kept in tact. The centipede at first hangs with its head downwards and remains in this position for over an hour after which it descends to the bottom slowly and creeps about even after a period of nineteen hours. Specimens apparently dead recoup almost at once on being taken out and move about as though never submitted to such a serious test. The animal when it dies, dies in a fully expanded condition. We may therefore safely presume that if the animal keeps coiled it is not yet dead.

The form is being described under a New Genus Mixophilus by Dr. F. Silvestri and has been called M. indicus

Conclusions.

It may be noticed that no new structure adapting the animal for life under water has been observed and under the circumstances the only alternate conclusions to be drawn are.

1. That the quantity of air needed to maintain life in this form is exceedingly small.

2. That the Tracheae store sufficient air for a period of nearly 24 hours.

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[1] The work was done in the Laboratory of the Presidency College, Madras, by the kind permission of Dr. S. G. M. Ramanupam, Professor of Zoology, from whom valuable suggestions were received.

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3. That the loop at the posterior end entangles a sufficient quantity of air on its outer dorsal surface while the chitinous channels in the coxae of the last legs may also serve to store up air.

Suggestions.

The polychaet *Lycastis* is regarded as an aquatic form tending towards life on land through the reduction of the parapodia and the simpler nature of the dorsal cirri which act as gills. May it not be that this Geophilid is in the process of changing its habitat in the reverse direction and the two animals meet as it were midway between land and water? It is true that no certain indications of any modification adapting this centipede for an aquatic life have been detected but it is a matter for further investigation, which is being done.

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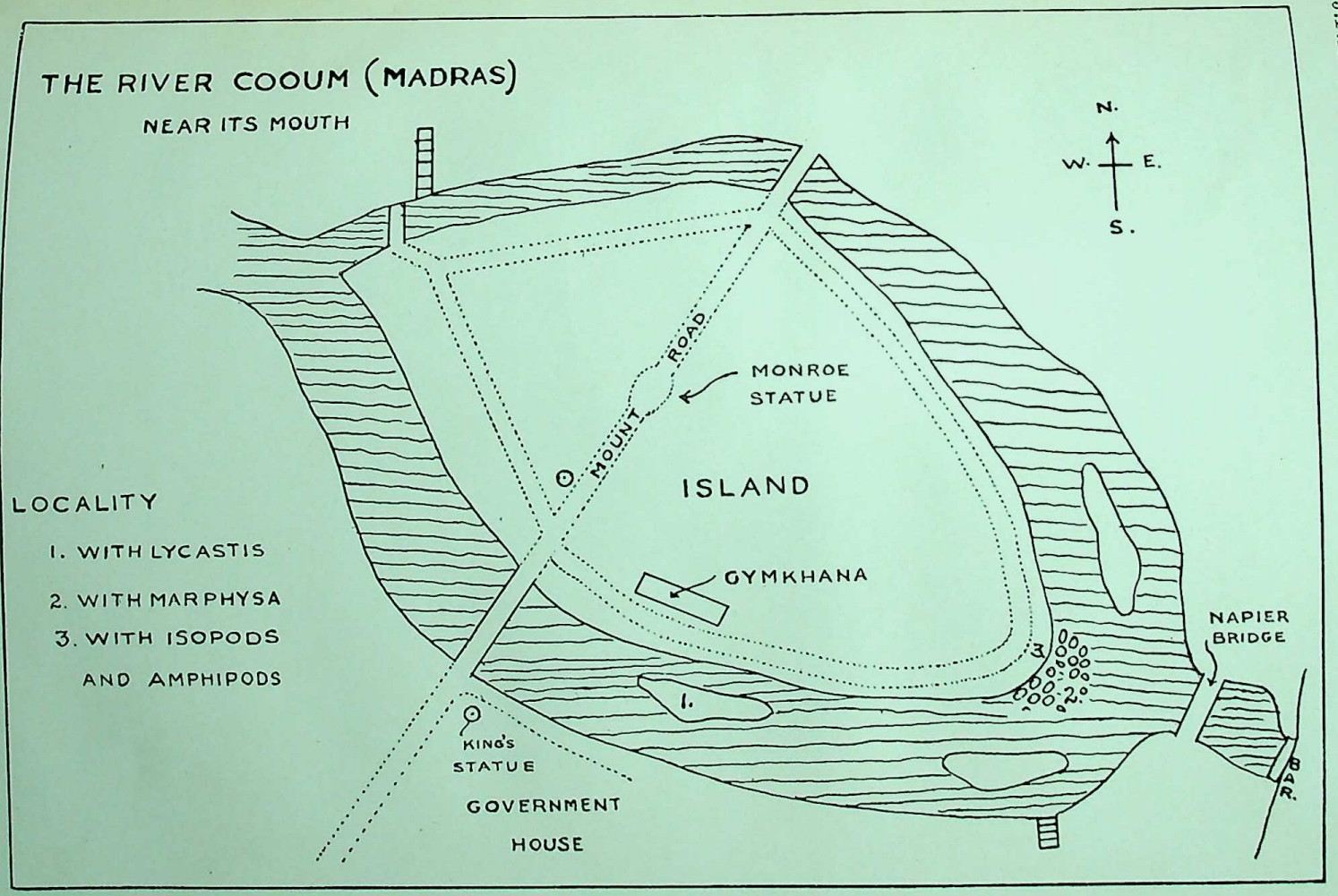

Map to illustrate distribution of amphibious centipede.

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The Chauhāns.

By R. R. HALDER, Rajputana Museum, Ajmer.

The Chauhāns, like the Parmāras, Chaulukyas, Guhilas, etc., seem to have derived their family name from the name of their primeval man *viz.*, Chāhamāna. At the present day, they claim their descent from the fire-fountain of Vaśishṭha on Mount Ābū, just as the Parmāras do, and so call themselves *Agnivaṁśī*. Their old records, however, speak them to be *Sūryavaṁśī*, *i.e.*, belonging to the solar race. The latter view is supported by the following versions:—

(1) The *Pṛithvīrājavijayamahākāvya* says that Chāhamāna descended from the *Sūryamaṇḍala* (solar orb).[1]

(2) *The Hammīramahākāvya* of Nayachandrasūri corroborates the above statement by saying that a celestial man named Chāhamāna came down from *Sūryamaṇḍala*, and having obtained paramount power, ruled over other kings.[2]

(3) The inscription[3] preserved in the Rajputana Museum, Ajmer, also speaks of Chāhamāna as having born in the solar family.

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[1] अथांशुभिस्सूर्यमयस्य चक्षुषस्स सूर्यकान्तादिव सूर्यमण्डलात् ।
जवाद्वारोद्दण्डचण्डिमा वसुन्धरासंसुखमर्चिषां चयः ॥ [१]
इति प्रतापायतनेन तेजसा नभश्चराणां निचयेन चर्चितः ।
जगत्त्रयीपुण्यसमृद्धिसंगमः पतङ्गमध्यात्पुरुषो विनिर्ययौ ॥ [१४]
करेण चापस्य हरेर्मनीषया बलेन मानस्य नयस्य मन्त्रिभिः ।
धृतस्य नामाग्निमवर्णनिर्मितं स चाहमानोयमिति प्रथां ययौ ॥ [४४]
Canto II.

[2] ततः शुभं स्थानमिदं विभाव्य प्रारब्धयज्ञो यमपास्तदैन्यः ।
विशंक्य भीतिं दनुजव्रजेभ्यः स्मेरस्य सस्मार सहस्ररश्मेः ॥ [१५]
अवातरन्मण्डलतोऽथभासां पत्युः पुमानुद्यतमण्डलाग्रः ।
तं चाभिषिच्याश्वदसीयरत्नविधौ व्यधादेष मखं सुखेन ॥ [१६]
पपात यत्पुष्करमत्रपाणेः ख्यातं ततः पुष्करतीर्थमेतत् ।
यत्रायमागादथ चाहमानः पुमाननोऽख्यायि स चाहमानः ॥ [१७]
Canto I.

[3] ससुत्थितोऽर्कादनरण्ययोनिरुत्पन्नपुन्नागकदंबशाखः ।
आश्चर्यमंतः प्रसरत्कुशोऽयं वंशोर्थिनां श्रीफलतां प्रयाति ॥ [३५]

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The above three versions speak of the Chauhāns as belonging to the solar race. A somewhat different statement, however, is made by Col. Tod, who at one place [1] connects them with the fire-pit of Vaśishṭha on Mount Ābū, but at another place [2] says that the *gōtrāchārya* of the Chauhāns is "Somvansa, Vacha gotra" etc., *i.e.*, they belong to the lunar race and are connected with Vatsa *Ṛishi*. This latter version of Tod is supported by the following inscriptions:—

(*a*) The inscription [3] dated, Saṁvat 1224 (A.D. 1167), of the time of Pṛithvīrāja II, speaks of him as having born in the race of the descendants of the moon.

(*b*) The Bijōlyān inscription,[4] dated S. 1226 (A.D. 1170), of the time of Sōmēśvara represents Sāmanta, an early Chauhāna chief, to have been born in the Vatsa *gōtra*.

(*c*) The inscription [5] dated S. 1319 (A.D. 1263) of the time of Chāchigadēva connects Chāhamāna with Vatsa *Ṛishi*.

(*d*) The Mount Ābū inscription [6] of S. 1377 (A.D. 1320) says that the Chāhamāna race was created by the sage Vatsa.

From the above, we conclude, whether the Chauhāns belong to the solar or lunar race, or have any connection with Vatsa *Ṛishi*, they assuredly do not belong to the *Agnikula* or have any connection with Vaśishṭha *Ṛishi*, as they declare themselves to be. They have, in all probability, derived this view about themselves from the poem called *Pṛithvīrājarāsā*,[7] which is a "later forgery."

Now let us briefly describe the accounts of the rulers of the main line of the Chauhān family, which began its rule in Mārwār. At first, Śākaṁbharī (Sāmbhar in Mārwār) was their capital, then Ajmer and then Ranthaṁbhōr in the Jaipur

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व्याधिव्याधिकुटत्तदुर्गतिपरित्यक्तप्रजास्तत्र ते ।
सप्तद्वीपभुजो नृपाः समभवन्निक्ष्वाकुरामाद्यः ।
.. ..
तस्मिन्नथारिविजयेन विराजमानो राजानुरंजितजनोऽजनि चाहमानः ।
.. ..

[1] Tod's *Rājasthān*, Vol. I, p. 113.
[2] *Ibid.*, Vol. III, p. 1444.
[3] *The Chronicles of the Pathan kings of Delhi* by Edward Thomas, pp. 60-61.
[4] *J.A.S.B.*, Vol. LV, pt. I, p. 41, verse 12.
[5] *Ep. Ind.*, Vol. IX, p. 71.
[6] *Ibid.*, Vol. IX, p. 79.
[7] See my article in J.B.B.R.A.S., Vol. III (New Series), p. 203.

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territory became their capitals; so that the Chauhāns can distinctly be called after the names of these capitals, as the Chauhāns of Sāmbhar, Ajmer and Ranthambhor, though they belonged to the same line.

A. The Chauhāns of Sāmbhar.

1. **Chāhamāna.** He was the originator of the Chauhān family, and is said to have descended from *Sūryamaṇḍala.* He was very powerful and possessed immense wealth. He became the ruler of a very large part of the country. His younger brother Dhanañjaya, who was very clever in the art of war, was the Commander of his forces.[1] He died at Pushkar while on pilgrimage.

2. **Vāsudēva.** He was born in the family of Chāhamāna.[2] He was very brave, powerful, famous, extremely benevolent and popular. A mythical story about him is related in Canto IV of *Pṛithvīrājavijaya,* regarding the foundation of the salt lake at Śākambharī (Sāmbhar), which was so called after the goddess Śākambharī (Pārvatī), whose shrine was there. The descendants of Vāsudēva ruled over the land presided over by the deity Śākambharī and were thus called "Śākambharīśvara."[3]

3. **Sāmantarāja.** He was like a moon in the family of Vāsudēva.[4] He ruled at Ahichhatrapura[5] which is most likely the place now called Nāgaur in Jodhpur territory.

4. **Jayarāja.** He was the son[6] of Sāmantarāja and was very valiant. Also called Ajayarāja and Ajayapāla. The power of other kings dwindled before him.

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[1] अतीव यो दुर्बल एव सर्वथा तमप्यधिष्ठाय बलिष्ठतां नयन-
समाप्तशस्त्राविधौ धनंजयो बभूव सेनापतिरस्य शाश्वतः ॥ [६४]
Pṛithvīrājavijaya, Canto II.

[2] कैलासोत्सङ्गसङ्गीतकसभिकशिवादिष्टगन्धर्वरामा-
गातव्योद्दामकर्मा समजनि वसुधावासवो वासुदेवः ॥ [८२]
Ibid., Canto II.

[3] भुवं शाकम्भरीदेव्या सनाथां यदुपासते ।
तदंघ्र्यास्तेन भण्यन्ते सर्वे शाकम्भरीश्वराः ॥ [५]
Ibid., Canto II.

[4] जज्ञे तदन्वयोदन्वत्सुधांशुर्वसुधापतिः ।
सामन्तराजस्सामन्तराजिकैरविणीरविः ॥ [७]
Ibid., Canto V.

[5] See note 4 on page 2.

[6] सुषुवे जयराजं तं राजन्तं तं जयश्रिया ।
यं वीक्ष्याजौ विव[खन्तं वखन्तं प्रा]प राजकम् ॥ [८]
Pṛithvīrājavijaya, Canto V.

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5. **Vigraharāja (I).** He was the son [1] of Jayarāja. His fame spread far and wide.

6. **Chandrarāja (I).** He was the son of Vigraharāja.[2]

7. **Gōpēndrarāja.** He was the younger brother of Chandrarāja.[3]

8. **Durlabharāja (I).** Was the son of Chandrarāja.[4] He fought with the Gaudas.[5]

9. **Gōvindarāja (I).** He was the son[6] of Durlabharāja (I). Also called Gūvaka. He attained superiority as a hero in the court of Nāgāvalōka (Nāgabhaṭa II) of Kanauj.[7] Now Nāgabhaṭa II flourished between the periods Saṁvats 872 and 890 (A.D. 815 and 833).[8] The date of Govindarāja, therefore, would fall about this period, *i.e.*, S. 872 (A.D. 815).

10. **Chandrarāja (II).** He was the son of Gōvindaraja.[9] Also called Śaśinṛipa.

11. **Gōvāka.** He was the son[10] of Chandrarāja II and was very famous. He was dexterous in the art of war and peace, and brave and firm in battle. His sister, Kalāvatī, possessed enchanting beauty; so her hand was sought by twelve kings, among whom she was married to the king of Kanauj (probably

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[1] इति स्तुतं कविवरैर्मुख्यं सर्वमहक्षिनाम् ।
प्राप विग्रहराजं स ग्रहराजमिवात्मजम् ॥ [११]
Ibid., Canto V.

[2] तनयश्चन्द्रराजोऽस्य चन्द्रराज इवाभवत् ।
संग्रहं यस्सुहृत्तानां सुहृत्तानामिव व्यधात् ॥ [१५]
Ibid., Canto V.

[3] तस्य गोपेन्द्रराजोऽभूदनुजो यो मनीषिणाम् ।
गोपेन्द्रराजस्मृतिकृद्गोमण्डल [धृतेरभूत्] ॥ [१७]
Ibid., Canto V.

[4] ततो दुर्लभराजेन चन्द्रराजस्य सूनुना ।
विनोदकेन गमिता हृदिं कीर्त्तीलता भुवि ॥ [१८]
Ibid., Canto V.

[5] यस्सिः स्नातोत्थितो यस्य गङ्गासागरसङ्गमे ।
चिरं गौडरसास्वादगुरुर्ब्राह्मणतां ययौ ॥ [२०]
Ibid., Canto V.

[6] प्रजापतिपदब्रह्मा षाड्गुण्यपुरुषोत्तमः ।
सुतो गोविन्दराजोऽस्य शक्तित्रयमहेश्वरः ॥ [२१]
Ibid., Canto V.

[7] *Ind. Ant.*, Vol. 57, p. 184.

[8] *Ep. Ind.*, Vol. IX, p. 199, *Prabhāvakacharita*, p. 177.

[9] नयन्मन्मथमुल्लासमात्मभूतश्रियस्य च ।
द्वितीयश्चन्द्रराजोऽभूत्ततोऽरिध्वान्तचन्द्रमाः ॥ [२२]
Pṛithvīrājavijaya, Canto V.

[10] सर्वराजार्कजीमूतस्सर्वदिग्वल्लरीमधुः ।
गोवाकस्तत्सुतस्सर्वद्वीपमण्डलयामिकः ॥ [२३]
Ibid., Canto V.

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Bhōja I, S. 900–38), and the wealth received after defeating other kings was given in her dowry.[1]

12. **Chandanarāja.** He was the son[2] of Gōvāka. He was very popular and wealthy. He killed the Tomara King Rudrēṇa (probably Rudrapāla of Delhi) in battle.[3] His wife Rudrāṇī also called Yoginī and Ātmaprabhā set up on the bank of Pushkar one thousand *liṅgās* of Śiva, which were, as it were, one thousand lamps to remove the darkness of the place.[4]

13. **Vākpatirāja (I).** He was the son[5] of Chandanarāja. Also called Vappayarāja Vatsarāja and Vaprarāja. He won 188 victories through his own prowess and built a very high temple of Śiva at Pushkar.[6] He was attacked by Tantrapāla (a neighbouring chief), who was forced to retreat.[7] He had three sons, named Siṁharāja, Lakshmaṇa and Vatsarāja, of whom Siṁharāja succeeded his father; Lakshmaṇa founded the kingdom of Nāḍōl, and Vatsarāja received a separate territory for himself.

14. **Siṁharāja.** He was the son[8] of Vākpatirāja I. He was a very brave, charitable and illustrious ruler. He subdued a Tomar leader allied with a certain king Lavaṇa and kept many prisoners in his prison.[9] He also defeated a Muhammadan general named Hātim.[10] He built a beautiful temple of Śiva at Pushkar. He was subordinate to the Imperial Pratihāras (Devapāla or Vijayapāla) of Kanauj, and had three sons named Vigraharāja, Dūrlabharāja, and Gōvindarāja.[11]

15. **Vigraharāja (II).** He was the son[12] of Siṁharāja and was a very valiant ruler. He restored the fortune of his

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[1] *Ibid.*, Canto V, verses 31–32.

[2] नन्दनश्चन्दनस्तस्य यस्य नामन्युदीरिते ।
जनस्सफल इत्युक्तिर्गेषाद्वचश्चमं जहौ ॥ [३२]
Ibid., Canto V.

[3] *Ep. Ind.*, Vol. II, p. 121, verse 14.

[4] *Pṛithvīrājavijaya*, Canto V, verse 37.

[5] सूनुर्वाक्पतिराजोऽस्य प्रसाद इव मूर्त्तिमान् ।
हिताय सर्वलोकानामुदपद्यत शाम्भवः ॥ [४०]
Ibid., Canto V.

[6] *Pṛithvīrājavijaya*, Canto V, verse 43.

[7] *Ep. Ind.*, Vol. II, p. 121, v. 16.

[8] धर्मस्येव नवः [सर्गः] स्थिति–⏑–⏑–
सिंहराज[ःसुतस्त]स्य संहार इव मान्मथः ॥ [४४]
Pṛithvīrājavijaya, Canto V.

[9] *Ep. Ind.*, Vol. II, p. 127, v. 19.

[10] *Hammīra Mahākāvya*, p. 14.

[11] *Ibid.*, Vol. II, p. 118. Also *Ind. Ant.*, Vol. 57, p. 184.

[12] सूनुर्विग्रहराजोऽस्य सापराधानपि द्विषः ।
दुर्बला इत्यनुध्यायन्नत्तत्रिय इवाभवत् ॥ [४७]
Pṛithvi°., Canto V.

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family and extended his sway as far as Narmadā.[1] He attacked the Chaulukya king Mūlarāja I (S 1017-52) of Gujarāt and forced him to retire to the fortress of Kanthā (Kanth Kōṭ) in Cutch.[2] He received the name *khurarajō ghōrāndhakāra*, *i.e.*, producer of darkness by the dust of the heels of his horses. He was kind even towards his enemies. He built a temple of the goddess Āśāpurī at Bhrigukachchha (Broach).[3] His inscription is dated S. 1030 (A.D. 973); consequently the date of Chāhamāna, the 14th predecessor of him, would fall in the last quarter of the 7th century A.D., taking an average of 20 years for each ruler.

16. **Durlabharāja (II).** He was the younger brother[4] of Vigraharāja II. The name of his minister was Mādhava. He was different from his namesake who harassed Mahendra, the Chauhān ruler of Nāḍōl.[5] He was called *Durlaṅghyameru.*

17. **Gōvindarāja (II).** He was the youngest brother[6] of Vigraharāja II. Also called Gaṇḍu and Gaṅgadeva. He succeeded Durlabharāja and his fame was sung by many a poet. He is said to have defeated Sultān Maḥmūd.[7]

18. **Vākpatirāja (II).** He was the son and successor[8] of Gōvindarāja II. Also called Vallabharāja. He was a great warrior and killed the Guhila ruler Ambāprasāda of Āghāṭa (Āhāḍa, the old capital of Mēwār).[9] He made his reign ex-

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[1] सूर्यवंशप्रसूतस्य चन्द्रमण्डलनिर्गता।
तस्य रेवामयी वाहैः कीर्त्तिर्मलिनिताभवत् ॥ [५२]
Ibid., Canto V.

[2] *Bombay Gazetteer*, Vol. I, pt. I., p. 158.

[3] व्यधादाशापुरीदेव्या भृगुकच्छे स धाम तत्।
यद्रेवास्पृष्टसोपानं चन्द्रश्चुम्बति मूर्धनि ॥ [५३]
Pṛithvi°., Canto V.

[4] तस्य दुर्लभराजोऽभूदनुजो माधवानुगः।
नारीणां सततं येन हृदये मदनायितम् ॥ [५४]
Pṛithvi°., Canto V.

[5] *Ep. Ind.*, Vol. XI, p. 68.

[6] यशांसि गीतलोकर्त्तुमिच्छयेव दिगङ्गनाः।
यस्य गोविन्दराजाख्यस्य तस्मादुदपद्यत ॥ [५६]
Pṛithvi°., Canto V.

[7] *Gauḍavaho*, Introduction, p. cxxxvii. If the Sultān be Maḥmūd Ghaznī, then the event probably took place in A.D. 1025 on the Sultān's way to Somanātha (*Duff.*, p. 113).

[8] तस्माद्वाक्पतिराजेन सम्भूतमवनीभुजा।
कलिः कृतीकृतो येन भू[मिश्च त्रिदि]वीकृता ॥ [५८]
Ibid., Canto V.

[9] अम्बाप्रसादमाघाटपतिं यस्सेनयान्वितम्।
अहृजद्यशसः पश्चात्पार्श्वं दक्षिणदिक्पतेः ॥ [५९]

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tremely happy for the people. He was called *gōtrabhida* (Indra) by his enemies; *dahana* (fire) by the women of his enemies; *mṛityu* (death) by the warriors of his enemies; *rākshasēśvara* (lord of the demons) by the people of his enemy's country; *prakṛishṭachētā* (noble-minded) by the politicians, *śadāgati* (wind) by those who sought protection with him and *dhanada* (*Kubēra*) by the needy.[1] His memory was long cherished by the people after his death.

19. **Vīryarāma.** He was the son[2] of Vākpatirāja II. Also called Vijayarāja. He was skilful in fighting, but was accidently killed by the king Bhōja I, (S. 1076–99) of Avanti Mālwā).[3]

20. **Chāmuṇḍarāja.** He was the younger brother of Vīryarāma. He is said to have ascended the throne according to *Hammīra Mahākāvya* and the Biḍolyān Inscription but not according to *Pṛithvirājavijaya*. He built a temple of Vishnu at Narapura (Narwar), in memory of his brother Vīryarāma.[4]

21. **Durlabharāja (III).** He succeeded Chāmuṇḍarāja.[5] He was also called Dūsala. He was styled *Vīrasiṁha*, but was unfortunately killed in the fighting with the *Mātaṅgas* (Muhammadans).[6] So, his younger brother Vigraharāja had to assume the rein of government.[7]

22. **Vigraharāja (III).** He was the younger brother of

भिन्नमम्बाप्रसादस्य येन च्छुरिकया मुखम् ।
प्रतापजीविकास्त्रीभिस्सममेव व्यमुच्यत ॥ [६०]

Ibid., Canto V.

Ambāprasāda was the successor of Śaktikumāra, whose inscription is dated S. 1034.

[1] *Pṛithvīrājavijaya*, Canto V, vv. 61–62.

[2] वीर्यरामस्सुतस्तस्य वीर्येण स्यात्स्मरोपमः ।
यदि प्रसन्नया दृष्ट्या न दृश्येत पिनाकिना ॥ [६५]

Ibid., Canto V

[3] अगम्यो यो नरेन्द्राणां सुधादीधितिसुन्दरः ।
जघ्ने यशश्चयो यस्य भोजेनावन्तिभूभुजा ॥ [६७]

Ibid., Canto V.

[4] तस्य चामुण्डराजेन कनिष्ठेन विनिर्ममे ।
विष्णोर्नरपुरे धाम विष्णुलोके तथात्मनः ॥ [६८]

Ibid., Canto V.

[5] अभूद्दुर्लभराजोस्माद्यदीयैः प्रतियोगिभिः ।
चराचराणां लुठितं पादान्ते भूभृतां भयात् ॥ [६९]

Ibid., Canto V.

[6] मातङ्गसङ्गरे यस्मिन्वीरसिंहेस्तमागते ।
अपरागोऽनुतापश्च विधिना प्रापि कर्कशः ॥ [७०]

[7] तस्य विग्रहराजेन भोगीन्द्रेणानुजन्मना ।
शेषेण च महीभारं त्याजिताः पृथिवीभृतः ॥ [७१]

Ibid., Canto V.

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Durlabharāja. Also called Vīsala. He gave to the Mālava king, Udayāditya (S. 1116-1143), a horse named Sāraṅga, with whose help the latter conquered the Gurjara king Karṇa (S. 1120–50).[1] His wife was Rājadevī.

23 **Pṛithvīrāja (I).** He was the son[2] of Vigraharāja III. At Pushkar, he killed seven hundred Chaulukyas, who came there to rob the Brahmans.[3] He built an alms-house on the way to Sōmanātha. His wife's name was Rāsalladēvī. His inscription is dated S. 1162.

24. **Ajayarāja.** He was the son[4] of Pṛithvīrāja I. Also called Ajayadēva, Ālhaṇadeva and Salhaṇa. He was very brave. He killed three kings, one of whom was named Yaśō-rāja.[5] He conquered the country up to Ujjain, and subdued the Mālava king (?) Sulhaṇa.[6] He was also very rich. He filled the country with silver coins.[7] His queen Sōmalēkhā (Saumalladēvī) coined money every day.[8] He built many reservoirs of water in the temples of gods and completely subdued the Muhammadans.[9] He founded the town of Ajaya-meru (Ajmer), which was then superior to Laṅkā and Dvārikā.[10] Having founded this town and seated his son

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1 सारङ्गाख्यं तुरङ्गं स ददौ यस्मै मनोजवम् ।
नच्युश्चैश्श्रवसं क्षीरसिन्धोरन्यः प्रयच्छति ॥ [७७]
जिगाय गूर्जरं कर्णं तमश्वं प्राप्य मालवः ।
लब्ध्वानूरुस्सूर्यरथं करोति व्योमलङ्घनम् ॥ [७८]

2 पृथ्वीराजस्सुतस्तस्मात्ततो – –◡– रभूत् ।
कुमारब्रह्मचारी हि कुमारो मद्[नद्विषः] ॥ [७९]
Ibid., Canto V.

3 *Pṛithvīrājavijaya*, Canto V, verse 81.

4 तस्माद्जयराजोऽभूद्दान्यो यद्दान्यतः ।
सर्वरत्नप्रदात्सिन्धोः कल्पवृक्षस्य जन्म तत् ॥ [८३]
Ibid., Canto V.

5 *J.B.A.S.*, Vol. LV, pt. I, p. 41, verse 15.

6 *Pṛithvīrājavijaya*, Canto V, v. 85. Sulhaṇa, according to the Bijolyān Ins. was the commander of the army, see n. 3, above.

7 स दुर्वर्णमयैर्भूमिं रूपकैः पर्यपूपुरत् ।
तां सुवर्णमयैस्तत्र कविवर्गस्त्वपूरयत् ॥ [८८]

8 सोमलेखा प्रियाप्यस्य प्रत्यहं रूपकैर्नवैः ।
कृतैरपि न संस्पर्शं कलङ्केन समासदत् ॥ [९०]
Ibid., Canto V.

9 यस्मद्दन्तायुधकरान्परिहर्तव्यपङ्क्तीन् ।
अत्यन्तगर्जनान्मत्तान्मातङ्गानजयद्रणे ॥ [११२]
Ibid., Canto V.

10 भवत्यजयमेरुत्वं सार्धं यस्य सुरालयैः ।
न हि पुण्यप्रभावेण तदस्त्येव न यद्भवेत् ॥ [१२०]
Ibid., Canto V.

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(Arṇōrāja) on the throne, he went to Heaven. Henceforth Ajmer became the capital.

B. The Chauhāns of Ajmer.

25. **Arṇōrāja.** He was son of Ajayarāja by his wife Sōmalēkhā.[1] Also called Ānāka, Ānaka and Ānnalladēva. He made Ajmer his capital. The first invasion of the Muhammadans on Ajmer seems to have been made during his reign. He completely vanquished the Muhammadans and killed a large number of them.[2] Those Muhammadans who came to Ajmer through the desert were extremely thirsty, and died after drinking the blood of horses. The dead bodies of the Muhammadans that were piled up on the road were burnt by the villagers for fear of bad smell being spread up all around. In order to purify the place, where the Muhammadans were killed, he constructed a lake, which was filled up with the water of the river Indu (Chandra.)[3] He also fought twice with the Solaṅkī ruler Kumārapāla (S. 1199-1230) of Gujarāt.[4] He built a temple of *Vāruṇa Vāṇaliṅga* in the name of his father Ajayarāja. He married the princess Sudhavā of *Avichi* (without waves *i.e.*, Mārwāṛ) and with Kāñchanadēvī, the daughter of the king Siddharāja Jayasiṁha of Gujarāt. He had three sons from Sudhavā, two of whom were named Jagadēva and Vigraharāja, and one son named Sōmēśvara from Kāñchanadēvī.[5] His inscription is dated S. 1196.

26. **Jagadēva.** He was the son of Arṇōrāja by his wife Sudhavā of Mārwāṛ. He rendered to his father the same service as Bhṛigunandana (*i.e.*, Paraśurāma) had done to his mother, and went out like a *dīpa* (Indian lamp) leaving behind

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1 भाग्यैस्समं समुत्पन्नं प्रजाभिस्सह लालितम् ।
वर्धितं सुकृतैस्साकमर्णोराजमस्रुत सा ॥ [९१]
Ibid., Canto V.

2 दोश्शालिनामाजयमेरवाणां यल्लोहघातैः करणीयमासीत् ।
भारायमाणैर्निजवर्मलोहैस्सदन्वभूवन्बहवस्तुरुष्काः ॥ [४]
Ibid., Canto VI.

3 विशुद्धिहेतोरथ तस्य राजा घ्राणेन्द्रियाकस्मिकरौरवस्य ।
चकारयत्कीर्त्तिपटीपिनद्धचीरोदनग्रङ्करणं तटाकम् ॥ [२१]
या पुष्करारण्यविहारशीला मन्दाकिनीवेन्दुनदी प्रसिद्धा ।
भगीरथस्सिन्धुमिव स्रवन्त्या तया तटाकं तमपूरि देवः ॥ [२३]
This lake is now called Ānāsāgar and the river as the Bāndi River.
Ibid., Canto VI.

4 *Ind. Ant.*, Vol. 56, pp. 10–11.
5 *Prithvīrājavijaya*, Canto VI, vv. 29–34.

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a bad smell.[1] For the reason of his being a parricide, it appears, his name is omitted in *Pṛithvīrājavijaya* and in the Bijolyān Inscription.[2]

27. **Vigraharāja (IV).** He was the younger brother of Jagadēva. Also called Vīsaladēva. He was a very powerful monarch. He conquered the land between the Vindhyā and the Himālayas, and by repeatedly driving out the Muhammadans, made Āryāvarta once more the abode of the Āryas.[3] He conquered Delhi, made it the residence of the Chauhāns, and extended his sway as far as Āsikā (Hānsī) in the Punjab.[4] He defeated Vastu Pāla (?), destroyed Nāḍol and set fire to Jāvālipura (Jālor in Mārwār).[5] He was very learned and a patron of learning. He composed the Sanskrit drama called *Harakēli Nāṭaka* and got this as well as the drama called *Lalita Vigraharāja Nāṭaka*, composed by his court-poet Sōmēśvara, inscribed on slabs, some of which are now preserved in the Rajputana Museum, Ajmer. He built a Sanskrit College at Ajmer, which is now called *Aḍhāi-din-ka-jhōnprā* and which was converted into a mosque in S. 1256 (A.D. 1200) by Shihābu-d-dīn Ghurī. He was also very charitable. He gave gold to the Brahmans and weighed against precious metals ten times. At the time of his death, he was pleased to learn the news of two sons being born to his brother (Sōmēśvara).[6] He was called 'Kavibāndhava' (*i.e.*, friend of poets). With his death this name[7] disappeared. His inscriptions are dated S. 1210-1211 and 1220.

28. **Aparagāṅgēya.** He was the son of Vigraharāja IV. Also called Amaragāṅgēya, Gaṅgapāla, Gāṅgadeva and Amaragaṅgu. He seems to have died shortly after his father's death.[8]

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1 प्रथमस्तुधवासुतस्तदानीं परिचर्यां जनकस्य नामकार्षीत् ।
प्रतिपाद्य जलाञ्जलिं घृणायै विदधे यां भृगुनन्दनो जनन्याः ॥ [१२]
Canto VII.

2 The same is the case with Udayasiṁha I of Mewār, who being a murderer of his father Kumbhā, is not enlisted by the bards among the rulers of Mewār.

3 *Ind. Ant.*, Vol. 19, p. 216.

4 *Ind. Ant.*, Vol. 19, p. 217. Also Vol. 57, p. 11.

5 *J.A.S.B.*, Vol. LV, pt. I, p. 42, V. 25.

6 अथ भ्रातुरपत्याभ्यां सनाथा जानता भुवम् ।
जग्मे विग्रहराजेन कृतार्थेन शिवान्तिकम् ॥ [५३]

7 कैलासं जग्मुषो यातं पश्चाद्विग्रहभूभुजः ।
कविबान्धव इत्यंकं भूमावश्रुरणं पदम् ॥ [५५]
Pṛithvirājavijaya, Canto VIII.

8 सुतोऽपरगाङ्गेयो निन्येऽस्य रविसूनुना ।
उन्नतिं रविवंशस्य पृथ्वीराजेन पश्यता ॥ [५४]
Ibid, Canto VIII.

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29. **Pṛithvībhaṭa.** He was the son of Jagadēva. Also called Pṛithvīrāja (II) and Pēthaḍadēva. He, too, seems to have died soon after the death of his uncle Vigraharāja.[1] He is said to have gained victory over the king of Śākaṁbharī (probably Aparagāṅgeya). Since his death the Royal Dignity left the line of Sudhavā and wished to visit Sōmēśvara. The ministers, therefore, brought Sōmēśvara along with his two sons[2] (Pṛithvīrāja and Harirāja) to the Sapādalaksha country (the country ruled over by the Chauhāns) and Karpūradēvī (Sōmēśvara's wife) entered the city of Ajayameru (Ajmer) with her two sons.[3] His inscriptions are dated S. 1224, 1225, and 1226.

30. **Sōmēśvara.** He was the son of Arṇōrāja by his wife Kāñchanadēvī of Gujarāt. While an infant, his grandfather, Siddharāja Jayasiṁha (S. 1150-99) of Gujarāt, on hearing from the astrologers that he would be an incarnation of Rāma to perform certain duties, took him to his court,[4] and it was Kumārapāla, the successor of Jayasiṁha, who brought up the child and thus made his name *kumārapāla* significant.[5] He was very brave. Having snatched off the knife from the king of Koṅkaṇ (Mallikārjuna Ś, S. 1078 and 1082) while in the act of jumping from one elephant to another, he cut off his head with it.[6] He received the name *Pratāpalaṅkēśvara.* He married Karpūradēvī, daughter of the (Kalachuri) king of Tripuri (Tēvara near Jubbulpura).[7] He built as many palaces as his brother Vigraharāja had destroyed hill-fortresses, and in the midst of them built the big temple of Vaidyanātha. In that temple, he set up an effigy of his father seated on horseback and in the front of it set up his own image made of metal.[8] He also set up the images of Brahmā, Vishnu and Mahēśa at one place in a temple. He built five temples at Ajmer and several others at the village Gaṅgānaka (modern Gangvāṇā, 9 miles N.E. of Ajmer). Where his father and brother had built only palaces, he founded a town and named it after his father.[9] His wife Karpūradēvī also founded a town.[10] He gave the village of Rēvaṇa to Pārśvanātha. Having placed his minor son Pṛithvīrāja under the protection of Karpūradēvī, he went to Heaven.[11] Inscriptions of his time are dated S. 1226, 1228, 1229, 1230, and 1234.

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[1] प्रत्यानेतुमिवाकाण्डे पूर्णोऽपि सकलैर्गुणैः ।
पितृवैरितनूजोऽपि प्रतस्थे पृथिवीभटः ॥ [५.९]
Ibid., Canto VIII.

[2] *Pṛithvīrājavijaya*, Canto VIII, vv. 57–58.
[3] *Ibid.*, Canto VIII, v. 59.
[4] *Ibid.*, Canto VI, vv. 34–35.
[5] *Ibid.*, Canto VII, v. 11.
[6] *Ibid.*, Canto VII, 15.
[7] *Ibid.*, Canto VII, v. 16.
[8] *Ibid.*, Canto VIII, vv. 66-67.
[9] *Ibid.*, Canto VIII, v. 63.
[10] *Ibid.*, Canto IX, v. 34.
[11] *Ibid.*, Canto VIII, vv. 72–73.

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31. **Pṛithvīrājā (III).** He was the son of Sōmēśvara. As already spoken, he was a minor when his father died. So, during his minority, his mother Karpūradēvī managed the affairs of the state with the help of the minister Kadambavāsa.[1] During her regency, perfect happiness reigned in the country. When Pṛithvīrāja grew up, he attained all the qualifications befitting a prince. He became dexterous in archery and the use of sword and gained several victories. He received a great help in the person of Bhuvanaikamalla,[2] the brother of his mother's father, and in the minister Kadambavāsa. With their help he did many things for the welfare of the people.[3] He laid siege to Guḍapura, which was taken possession of by Nāgārjuna, son of his uncle Vigraharāja IV, and put him to flight.[4] He then brought Nāgārjuna's mother to Ajmer along with other warriors in chains, and placed the heads of his enemies on the battlements of the fort of Ajmer.[5] He defeated in S. 1239 (A.D. 1182) the Chandēla king Paramardidēva of Jējākabhukti (Mahobā).[6] He determined to destroy the Muhammadans, when the latter took possession of Naḍval (Nāḍol in Mārwāṛ).[7] On hearing that he resolved to destroy the Muhammadans, the *mlēchchha* king Gori (Muḥammad Ghurī) sent a messenger to his court.[8] He then fought a battle against Muhammad Ghurī at Tarāin 1191 A.D. and utterly defeated him. Shihābu-d din Ghurī badly wounded returned to Ghazni but next year, he retured to India with a large force and encountered Pṛithvīrāja near Thānēśar. Pṛithvīrāja was captured in the battle that ensued, and put to death shortly afterwards in 1192 A.D.[9] Ghurī then went to Ajmer, took possession of it and, on the promise of a punctual payment of a tribute, delivered over the country to Gōvindarāja, son of Pṛithvīrāja.[10] His inscriptions are dated S. 1236, 1239, 1244, and 1245.

32. **Harirāja.** He was the brother of Pṛithvīrāja (III). Also called Hēmrāj and Hirāj. On hearing that Gōvindarāja had accepted to pay a tribute to the Sultān, he expelled his nephew from Ajmer and forced him to take shelter at Ranthaṁbhōr, where the latter founded a separate kingdom for himself.[11] There too, he attacked Gōvindarāja, who soon received help from Quṭubu-d-dīn Ibak, who marched in person towards Ranthaṁbhōr. Harirāja, therefore, was obliged to retreat to Ajmer. But, not long afterwards he was attacked

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1 *Ibid.*, Canto IX, v. 38.
2 *Ibid.*, Canto IX, v. 68. 3 *Ibid.*, Canto IX, v. 89.
4 *Ibid.*, Canto X, vv. 7, 8, and 32.
5 *Ibid.*, Canto, X, vv. 36 and 38.
6 *Ep. Ind.*, Vol. V., Kielhorn's Northern List, No. 176.
7 *Pṛithvīrājavijaya*, Canto X, v. 50. 8 *Ibid.*, Canto X, vv. 40-42.
9 Brigg's *Ferishta*, Vol. I, pp. 172-77. 10 *Ibid.*, pp. 177-78.
11 *Ep. Ind.*, Vol. XIX, p. 47 n. 1.

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by Quṭubu-d-dīn and a battle was fought in 1194 A.D., in which he sustained defeat, after which he sacrificed himself in the flames of a pyre.[1] Quṭubu-d-dīn then appointed a Muhammadan Governor of Ajmer, which henceforth came under the direct rule of the Muhammadans and ceased to be the capital of the Chauhāns. Harirāja's wife was Pratāpadevī and his inscription is dated S. 1251.

C. The Chauhāns of Ranthaṁbhōr.

33. **Gōvindarāja.** As has been said above, Gōvindarāja being driven out of Ajmer by his uncle Harirāja, established a kingdom at Ranthaṁbhōr and thus became the founder of the Chauhāns of Ranthaṁbhōr. Since his time Ranthaṁbhōr became the capital of the Chauhāns.

34. **Bālhaṇadēva.** He succeeded Gōvindarāja and was a tributary to the Sultān Shamsu-d-dīn Altmash (A. D. 1210-35). He had two sons named Pralhādadēva and Vāgbhaṭa.[2]

35. **Pralhādadēva.** He was the elder son of Bālhaṇadēva. He was a just king and ruled mildly. He was placed on the throne during his father's lifetime and his younger brother Vāgbhaṭa was appointed to the post of prime minister. He died of wounds caused by a lion in a hunting expedition.[3]

36. **Vīranārāyaṇa.** He was the son of Pralhādadēva. He was haughty and imperious. He fought a battle with the Sultān Jalālu-d-dīn of Delhi A.D. 1290-95), in which neither party obtained the advantage. Jalālu-d-dīn, however, received the presence of Vīranārāyaṇa to Delhi through a stratagem, where after a few days he was poisoned and killed.[4] Consequently, Ranthaṁbhōr fell into the hands of Jalālu-d-dīn.

37. **Vāgbhaṭa.** He was the younger brother of Pralhādadēva. Also called Vāhaḍa. Being touched to the quick by some harsh words of his nephew Vīranārāyaṇa, he went to Mālwā. After gaining possession of Ranthaṁbhōr, Jalālu-d-dīn sent a message to the Mālwā king that Vāgbhaṭa should be put to death. The king of Mālwā lent a willing ear to this proposal, but Vāgbhaṭa soon discovered the plot. He then murdered the king of Mālwā and possessing himself of the throne, gathered an army, and marched towards Ranthaṁbhōr. The Muhammadan garrison was made to vacate the fort and he became master of Ranthaṁbhōr. He then stationed large forces at different parts of the country along the frontier and thus kept off the enemies. He died after a happy reign of twelve years.[5] He was twice attacked by Ulugh Khān (brother of 'Alān-d-dīn).[6]

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[1] Elliot: *History of India*, Vol. II, pp. 225–26.
[2] *Ind. Ant.*, Vol. VIII, p. 62.
[3] *Ibid.*, p. 62.
[4] *Ibid.*, p. 63.
[5] *Ibid.*, p. 63–64.
[6] *Ep. Ind.*, Vol. XIX, p. 47.

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38. **Jaitrasiṁha** was the son of Vāgbhaṭa. He defeated in a battle Jayasiṁha III of Mālwā and also a ruler of Āmbēr. He handed down the government to his son Hammīra and went away as a religious recluse. He had two other sons named Surattrāṇa and Vīrama, who were great warriors.[1] He died in S. 1339 (A.D. 1283).

39. **Hammīra.** He was the son of Jaitrasiṁha, as already spoken. He was the last Chauhān king of Ranthaṁbhōr, and was endowed with all the qualities of a ruler. He carried a series of successful expeditions against Gaḍhamaṇḍala, Ujjain, Chitrakūṭa (Chitōr), Ābū, Vardhanapura (Badnor), etc., and defeated Arjunavarmā II, and Bhōjarāja II of Mālwā.[2] He was first attacked by Ulugh Khān, younger brother of 'Alāu'ddīn in vain, and then by 'Alāu'ddīn (A.D. 1296–1315) himself, who after treacherously winning over to his side Hammīra's officers named Ratipāla, Raṇamalla and others, succeeded in reducing Hammīra to a miserable plight. Hammīra, however gave battle with his few remaining followers and fell in it pierced with shafts. With his own hand he severed his head from his body.[3] Thus the rule of the Chauhāns at Ranthaṁbhōr came to an end with Hammīra's death in A.D. 1301. His inscription is dated S. 1345.

After the fall of Ranthaṁbhōr, it is said, the descendants of Hammīra migrated towards Gujarāt, as may also be concluded from the discovery of an inscription, dated Saṁvat 1525 (A.D. 1469), of the time of the Chauhān king Jayasiṁhadēva in Gujarāt. It mentions the names of twelve predecessors of Jayasiṁhadēva, commencing with Rāmadēva, who, therefore, appears to be a near relative of Hammīra. Rāmadēva established his capital at Chāmpāner, which remained so till the time of Jayasiṁha, in whose reign it was conquered by the Sultān Maḥmūd-Begḍhā of Gujarāt. Jayasiṁha was defeated and put to death shortly afterwards on his refusal to embrace Islām. His grandsons, Pṛithvīrāja and Dungarji, however, went away and founded the houses of *Choṭā Udayapur* and *Bāriā* (Bombay) respectively. The Chauhāns of these places seem to be thus connected with the celebrated Pṛithvīraja of Ajmer and the house of Sāmbhar.[4]

Thus we see that the Chauhāns were a mighty race of rulers who had established their rule in Mārwāṛ before[5] the imperial Pratihāras of Kanauj. They, at first, seem to have been independent rulers but later on, had to accept subordination to

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[1] *Ind. Ant.*, Vol. VIII, p. 64.
[2] *Ibid.*, p. 64 and *Ep. Ind.*, XIX, pp. 47–48.
[3] *Ind. Ant.*, Vol. VIII, pp. 65–73.
[4] *Ind. Ant.*, Vol. VI, pp. 1–4.
[5] The Chauhāns appear to have established their power in Mārwāṛ about the time when the rule of the Chāvdās in Mārwāṛ was on the wane in the first quarter of the 8th century A.D. (See *Ante*, Vol. LVII, p. 182.)

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the Pratihāras, when the latter became the paramount sovereign in Northern India. After the decay of the Imperial Pratihāras, however, these Chauhāns of Sāmbhar became the sovereign rulers in India. Pṛithvīrāja III of Ajmer, belonging to the main line of Sāmbhar was the last Hindu emperor of India. Even after the death of Pṛithvīrāja, this line of the Chauhāns continued to rule with sufficient power up to a comparatively later period, while their contemporary rulers, *viz.*, the Solaṅkis of Gujarāt, the Parmāras of Mālwā, etc., dwindled into insignificance. From the main line of Sāmbhar, however, other branches of the Chauhāns, such as the Chauhāns of Nāḍol, Sirohi, Bundi, etc., sprang up, which will be dealt with later on.

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Indo-American Trade, Past and Present.

By J. C. Sinha.

The increase of American trade with India since the outbreak of the Great War has attracted much attention. During the quinquennium 1909-14, the average annual trade of the U.S.A. with India was 5.8 per cent. as compared with 40.0 per cent. of the trade enjoyed by Britain. In 1927-28,[1] the latest year for which trade returns are available, the share of the U.S.A. rose to 9.9 per cent. while that of England dropped [2] to 34.9 per cent. America now ranks second in order of importance among the countries which carry on trade with India. It is interesting to note that America enjoyed the same position during the period of Napoleonic Wars at the beginning of the last century. The respective shares of England, America, and Continental Europe in the trade of British India during the period 1802–3 to 1807–8, were 67 per cent., 21 per cent. and 12 per cent.[3] respectively.

Beginning of Indo-American Trade.

The American trade with India began in 1785. The War of American Independence which had cut off the supply of Indian goods to the colonists, came to a close on the conclusion of the treaty of Versailles on September 3, 1783. On the 27th of December, 1784, the first American ship, appearing in the Indian seas, arrived at Pondicherry. She was bound for China but having failed in her intended voyage, proceeded to Acheen and from thence to the Coromandel coast. Her cargo consisted of naval stores, wine, and treasure.[4] But the first American ship

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[1] i.e., from 1st April, 1927 to 31st March, 1928, but it may be noted here that towards the close of the 18th and the beginning of the 19th century, the fiscal year, referred to in trade returns, was from the 1st of June to the 31st of May.

[2] Though the United Kingdom's share is now smaller than it was before the War, there has been a slight increase in her share in 1927–28 as compared with the year 1926–27. For the respective shares of the U.K. and the U.S.A. from 1909–14 to 1927–28, see the table towards the end of the paper.

[3] *Papers relating to East India Company's Charter*, ordered by the House of Commons to be printed, Apl. 14, 1812, p. 21. The percentages have been calculated by the present writer from the average annual value of exports and imports during the period of six years from 1802-3 to 1807–8.

[4] Madras letters quoted in *Home Miscellaneous Records* (I.O.) Vol. 605, p. 77.

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to go directly to India was the "Hydra" which reached the Hooghly in June 1785, after a voyage of four months from Rhode Island via the Cape of Good Hope.[1] It was allowed to land its cargo in Calcutta under the French flag.[2] Other American ships followed. The Court of Directors agreed to their admission to the British Indian ports as American ships. This recognition put them on a footing of equality with foreign but not with British ships. Thus, the American ships had to pay double the pilotage charge imposed on British ships, for entering the port of Calcutta.[3] But all discrimination against American vessels was removed by a commercial treaty between England and the United States on Nov. 19, 1794. The treaty confirmed to the latter the right of direct trade with British India, a right which up to that time was a "gratuitous license revokable at (the) pleasure" of the Court of Directors. In addition to this privilege, the Americans were put on the same favoured position as British subjects, with respect to import duties.[4] The treaty was ratified by an Act of the British Parliament on the 4th of July, 1797 and remained in force for twelve years.[5]

The Jay Treaty.

The clauses in the treaty which refer to the trade between India and America, are given below :—

"Article 13. His Majesty consents the vessels "belonging to the citizens of the United States of America

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1 Bengal letters quoted in *Home Miscellaneous Records* (I.O.) Vol. 605, p. 59. See also pp. 77–78.

For a graphic description of the voyage of an American ship from Calcutta to Philadelphia in 1795–96, see Twining's *Travels in India A Hundred years Ago* (London, 1893).

2 As early as 1773, ships belonging to foreign factories had been permitted by the English E.I. Company to import at Calcutta but they were required to pay the same duties as if they imported at their own factories. Later on, such ships had to pay the established duties of the port of Calcutta. The "Hydra" was evidently allowed to land its cargo in Calcutta as a French ship, under the above regulations. Though the privilege of importing at Calcutta had been withdrawn from the French in 1775, it must have been restored on the conclusion of peace in 1783. (See *Home Miscellaneous Records* (I.O.) Vol. 494, pp. 101, 103.)

3 *Home Miscellaneous Records* (I.O.) Vol. 605, p. 68.

4 The Government duty of 2½ per cent. which was abolished in 1788, was re-established in Calcutta in 1795. Under it, all British and foreign ships importing at Calcutta were liable to 2½ per cent. on their import cargo but foreigners importing in that port, paid on the amount of their invoice with an advance of 60 per cent. British subjects paid on the amount of their invoice only. This privilege was extended to the Americans with the ratification of the treaty.

5 Macpherson—*The History of European Commerce with India*, (London, 1812) p. 226. See also *Home Miscellaneous Records*, Vol. 524, p. 665, where the Court of Directors observe that "the treaty was at an end on the close of the session of Parliament in 1808."

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"shall be admitted and hospitably received in all the sea "ports and harbours of the British territories in the East "Indies and that the citizens of the said United States may "freely carry on a trade between the said territories, and "the said United States in all articles of which the "importation or exportation respectively to, or from the "said territories shall not entirely be prohibited..... "The citizens of the United States shall pay for their "vessels when admitted into the said ports no other or "higher tonnage duty than shall be payable on British "vessels, when admitted into the ports of the United "States. And they shall pay no other or higher duties or "charges on the importation or exportation of the cargoes "of the said vessels, than shall be payable on the same "articles when imported or exported in British vessels. "But it is expressly agreed that the vessels of the United "States shall not carry any of the articles exported by them "from the said British territories to any port or place "except to some port or place in America where the same "shall be unladen....."[1]

Effect of the Treaty.

The treaty thus stimulated direct trade between India and the U.S.A. Now, the question arose—did the treaty restrict the right of the Americans of a circuitous trade on their outward voyage to India? The question was decided in the case of *Wilson* v *Marryat*, before the Court of King's Bench in London on November 21, 1798. The judge was of opinion that the Americans had not been restrained by the treaty to a direct outward voyage to India, though their exports from that country had to be carried direct to some port of the U.S.A. The decision was confirmed in a judgment of the Court of Exchequer on May 6, 1799.[2] This judicial interpretation proved to be a valuable privilege to the Americans. It enabled them to import into India various commodities from the European ports which their ships touched on their way to the East.

Without this circuitous trade, it was difficult for the Americans to export much from India. America was then predominantly an agricultural country and very little of her merchandise was suitable for the Indian market. In 1789, Franklin estimated that the wealth and population employed in trade and manufacture in the U.S.A. represented only $\frac{1}{8}$th of

[1] The clauses in this treaty (known as the Jay treaty) relating to Indo-American trade have been quoted from the General Letter from the Court of Directors of the English East India Company dated August 31, 1796.

[2] See *Home Miscellaneous Records* (I. O.) Vol. 491, pp. 67–102, for these two judgments.

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that employed in agriculture.[1] The factory system was then just beginning in America, the first cotton factory having been started there only in 1787. This factory, though it obtained aid from the State treasury, was unsuccessful. An English Committee reported in 1791 "that the American cotton manufactures were of a coarse grade, of worse quality and of higher price than those produced at Manchester."[2] But Manchester stuffs were also still far behind the Indian fabrics in point of excellence.[3]

War between France and England.

With the opening up of commercial intercourse with India, America was naturally anxious to have Indian cotton goods. These formed her chief import from India till 1819–20, when sugar obtained the lead, which again was soon after replaced by indigo. The increase in the export of Indian goods to the U.S.A. till the year 1806–7 was due not merely to the demand of the American market but also for re-exports to Continental Europe, which had been cut off from a considerable portion of the supply of Indian commodities, on account of the war between England and France.

Development of Shipping.

In this war, Holland joined France against England, and India's trade with the French and the Dutch was brought to a close. The Portuguese and the Danish trade however went on till 1806 and 1808 when these two nations were also drawn into the war against England. Thus a considerable part of the carrying trade of the world fell into the hands of America and her merchant marine increased rapidly. Her tonnage which in 1789 was not much in excess of 100,000 exceeded 500,000 in 1795 and 900,000 in 1810.[4]

Growth of Entrepot Trade.

The profits in this carrying trade were so high that it paid the Americans to ship Indian goods first to America and then re-export them to Europe. Thus, it is written in the *Report on*

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[1] Rabbeno—*The American Commercial Policy* (2nd Edition, 1895) p. 127.

[2] Clive Day—*A History of Commerce* (Longmans, 1907) p. 468.

[3] Though the powerloom had been invented in England as early as 1784, it was imperfect in many ways. The rapid progress of the English cotton industry became possible only after Horrock's improvements in 1813.

[4] Day—*Op. cit.*, p. 493. This feature was also repeated during the World War which gave a great impetus to American shipping. "From June 1914 to June 1919, according to Lloyd's register of shipping, it increased from 5,500,000 gross tons to 13,091,773 gross tons."

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the External Commerce in Bengal for 1795–6 "that a very considerable part of piece-goods laden during the last season, will be *reshipped* from America to France or other parts which may appear equally favourable for their disposal."[1] The same statement is practically repeated in the *Report on the External Commerce of Bengal* for 1803-4 where it is said "that many ships clearing out here for America merely proceed to an American port for the purpose of procuring a new set of papers; with these papers (without breaking bulk) they sail for France, and dispose of the produce and manufacture of British India in French port." The total value of American trade (exports and imports) with British India in 1802 was *sicca*[2] rupees 108,31,218 or £1,353,902. In 1806, the value of exports and imports in this trade more than doubled and reached 218,64,303 *sicca* rupees or £2,733,038.[3]

Bulk of Trade with Bengal.

By far the largest part of this trade[4] was carried on with Bengal. This is evident from the following table[5]:—

American imports (bullion and merchandise) during six years (1802–7) into:—

	Sicca rupees.
Bengal	364,81,931
Madras and its Dependencies	75,70,122
Bombay and Surat ..	8,73,091
Total Import S.R. ..	449,25,144

Exports (bullion and merchandise) to America during six years (1802–7) from:—

	Sicca rupees.
Bengal	373,85,606
Madras and its Dependencies	34,94,034
Bombay and Surat ..	6,82,150
Total Export S.R. ..	415,61,790

This import trade consisted of S.R. 391,69,500 of bullion and S.R. 57,55,644 of merchandise. In the export trade the

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[1] See extracts from the Reports on the External Commerce of Bengal in Vol. 8 (Paper 171), 1812–13 of the House of Commons Papers relating to the East India Affairs.

[2] The *sicca* rupee was the newly coined rupee, converted into current rupee (which was the standard money of account) at the rate of 100 *sicca* rupees to 116 current rupees. On this subject see the present writer's *Economic Annals of Bengal* (Macmillan, 1927). The *sicca* rupees quoted above, have been converted into sterling at the rate of 2s. 6d. per *sicca* rupee, which was then the current rate of exchange. This is evident from the House of Commons Papers on India for 1812-13. Thornton in his edition of Milburn's *Oriental Commerce* (London, 1825) p. 284, also writes: "The current rupee is reckoned at 2*s.* and a *sicca* rupee of account commonly at 2*s.*, 6*d.*" Macpherson must have confused the *sicca* rupee and the current rupee when he says in p. 423 of his *History of European Commerce* (London, 1812) that "the *sicca* rupee may be valued upon an average, at two shillings sterling."

[3] Macpherson—*Op. cit.*, p. 423.

(See footnotes [4] and [5] on next page.)

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great bulk was merchandise. The amount of bullion exported during the six years amounted to S.R. 154,176 only out of the total export of S.R. 415,61,790.

Loading of Cargo in Calcutta.

It was but natural that the great bulk of the Indo-American trade passed through Calcutta. A graphic account of the loading of cargoes in an American ship in this port, is given in an official report for 1799-1800 :—

"The first day is employed in moving into a small house hired by the *banian*, previous to the ship's coming to anchor, delivering the register to the Police Office, and manifest at the Custom House. The second in putting up screws for the bale

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[4] Some idea of the items of merchandise in the Indo-American trade of this period may be had from the following account :—

American imports into India in 1805.

	Sicca rupees.
Wine	11,77,650
Cyder	332
Coffee	3,893
Cordage	1,780
Metals	1,44,049
Timber and plank ..	39,833
Spices	55,687
Oilman's stores ..	14,299
Piecegoods	25,096
Broadcloth	2,630
Sundries	1,18,828
Total import of merchandise S.R. ..	15,84,077
Bullion S.R. ..	71,04,282
Total import of merchandise and bullion S.R.	86,88,359

Indian exports to America in 1805.

	Sicca rupees.
Piecegoods	60,43,576
Sugar	11,69,261
Indigo	2,13,890
Cotton	1,18,592
Camphire	6,416
Ginger	13,511
Seeds	1,000
Hemp, flax, and twine	13,051
Canvas and gunnies ..	22,810
Sundries	25,037
Total export of merchandise S.R. ..	76,27,144
Re-exports	88,067
Total S.R.	77,15,211
Export of bullion ..	Nil
Total export of merchandise and bullion S.R.	77,15,211

For this list of imports and exports see Appendix 47 to the Fourth Report from the *Select Committee on the Affairs of East India Company*, 1812, p. 146, or Milburn's *Oriental Commerce* (London, 1813) Vol. II, p. 135. Items of merchandise in the American trade with Bengal, Madras, and Bombay in 1805 are also separately shown in Milburn. It is interesting to note that gunny was exported from Bengal to America as early as 1805.

[5] The above table is based on the figures given in Macpherson's *History*, p. 423.

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goods, and settling through the means of the *banian*, the prices of sugar. . . . . The receipt of the sugar is subsequently entrusted to the care of an officer of the ship, while the captain superintends the receipt of bale goods, generally to the extent of 3,000 pieces per diem, thus in the course of 20 or 25 days, a vessel of 300 tons burthen will have her homeward cargo on board."[1] It appears from the *Report on the External Commerce of Madras* for 1811–12 that of late years American ships, after completing the more valuable part of their cargoes in Calcutta, proceeded to Madras for such piecegoods as were required from that port.[2]

Bullion the Chief Import into India.

One great obstacle to the progress of this trade was that America had few exportable goods to India in those days. In this respect she was in a weaker position than European countries. During the period of six years from 1802–3 to 1807–8 the treasure exported by the Americans to British India was almost seven times as large as the amount of goods in value.

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[1] A statement of the different items and value of merchandise exported from Calcutta by the Americans during the decade 1796–7 to 1805–6, is given below from *Home Miscellaneous Records* (I.O.) Vol. 494, p. 309:—

Year ending 31st May.	Piece-goods.	Indigo.	Sugar.	Sundries.	Total.
	Sicca Rs.	Sicca Rs.	Sicca Rs.	Sicca Rs.	Sicca Rs.
1796–97 ..	20,77,886	50	3,34,284	1,48,085	25,60,305
1797–98 ..	14,38,667	Nil	5,19,833	67,102	20,25,602
1798–99 ..	8,30,459	,,	1,70,860	1,61,858	11,63,177
1799–1800 ..	28,44,333	,,	6,59,340	2,82,264	37,85,937
1800–1 ..	52,36,364	,,	5,50,513	3,19,856	61,06,733
1801–2 ..	41,52,244	,,	3,10,379	1,03,205	45,65,828
1802–3 ..	40,21,943	66,256	5,04,594	3,17,112	49,09,905
1803–4 ..	54,50,835	33,716	8,53,313	4,22,192	67,60,056
1804–5 ..	24,89,590	77,386	6,53,332	1,24,276	33,44,593
1805–6 ..	47,63,132	2,13,890	11,69,261	1,31,772	62,78,055
Total ..	333,05,462	3,91,298	57,25,709	20,77,722	415,00,191

N.B.—*Sicca* rupees may be converted into sterling at the rate of 2*s* 6*d*. per *sicca* rupee.

[2] See Vol. 9 (Paper 46) 1813–14 of the House of Commons Papers relating to the East India Affairs.

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The ratio of goods to bullion in the export of the foreign Europeans (*i.e.*, the Europeans who were not British subjects) to India during the same period was 1 : 2.[1]

Fortunately for the Americans, mercantilism had become an obsolete policy at the time. There was no bullionist like Milles or Malynes to oppose the export of bullion to India. Yet the scarcity of circulating medium in America after the War of Independence made it difficult to spare a large quantity of precious metals.

Various devices were therefore adopted to reduce the import of bullion into India and to raise there funds for the purchase of Indian products. We learn from the *Report of the Import and Export Trade of Calcutta* for 1796–7 that in the previous year tracts of American lands had "been offered, either for sale or barter for merchandise but without success." But bills drawn from America on individuals in Calcutta for the purchase of American stock met with a better fate. The exports to America exceeded the imports into Bengal during the three years from the 1st June, 1795 to the 31st May, 1798 by *sicca* rupees 31,02,189 or £ 387,774. Out of this sum the bills drawn (*a*) from America on persons in Calcutta for the purchase of American stock and (*b*) from London on agency houses[2] in Calcutta were estimated at £ 37,500 and £ 100,000[3] respectively.

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[1] *Papers relating to East India Company's Charter*, ordered by the House of Commons to be printed April 14, 1812, p. 20. Statistics of American imports into Madras and Bombay before 1802 are not available but the trade returns of Bengal during the period 1795–96 to 1799–1800 give a fair idea of the ratio of bullion to merchandise in Indo-American trade. It appears from these reports that the ratio of goods to bullion in the import trade of Bengal during the quinquennium was 1 : 6 in the case of the Americans and 1 : 2 in the case of foreign Europeans. See *Home Miscellaneous Records*, Vol. 494, p. 77.

[2] The origin and functions of such agency houses are thus described by Thomas Bracken, a partner of the agency house of Messrs. Alexander & Co. of Calcutta, before the Select Committee of the House of Commons on the Affairs of the East India Company on the 24th of March, 1832:—

"The commerce of Calcutta was in the hands of a very small number of houses before the opening of the present charter (*i.e.*, of 1813); previous to that time, the houses were chiefly formed of gentlemen who had been in the civil and military services, who, finding their habits perhaps better adapted for commercial pursuits, obtained permission to resign their situations, and engage in agency and mercantile business. They had of course a great many friends and acquaintances in their respective services and from these gentlemen they received their accumulations. They lent them to others or employed them themselves for purposes of commerce."

[3] These figures have been taken from the *Report on the Private Trade between Europe, America and Bengal* from the 1st June, 1795 to the 31st May, 1800, in Vol. 8 (Paper 171) 1812–13 of the House of Commons Papers relating to the East India Affairs.

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Handsome Profits.

But, as has been already said, by far the largest part of the Indian exports to America was in those days purchased with the shipment of bullion. In spite of this, the trade with British India, was very profitable to the Americans. It is stated in the *Report on the External Commerce of Bengal* for 1796–97 that "the net profit of a voyage to Bengal, if the ship brings dollars, is estimated at 60 per cent. after the payment of every charge incidental thereto, and debiting the adventure with an interest at the rate of 7 per cent. per annum. This profit is generally realised in fifteen months." The *Report* for 1799–1800 also shows that the Americans derived considerable profits from this trade.

Reasons.

The large profits of the Americans were mainly due to their neutrality during the War in Europe. They had not to pay heavy duties, freights and insurance rates like the belligerent nations. On the other hand, they had a ready access to the ports of France and her allies from which the English East India Company and private British traders had been shut out. Another reason for their success was their economical management. As the writer of the *Report on the External Commerce of Bengal* for the year 1803-4, observes "the enterprising spirit of these (American) merchants, the comparative trifling expense attending the outfit and navigation of their ships, the facility with which they purchase their goods here, added to their strict attention to economy in all commercial transactions are circumstances from which collectively they derive considerable profits, whether it is in the purchase of their cargoes here, or the disposal of them elsewhere."

Their economical management was partly due, as stated in the *Report of the External Commerce of Bengal* for 1799–1800, to the fact that they seldom, if ever applied "to Christians of any denomination for their homeward cargo." Unlike the other foreign traders who dealt exclusively with the European agency houses, the Americans transacted their business through Indian merchants or brokers whose charges were much lower.[1] The most important of them was Ramdoolal De, a Bengali gentleman who began his career as a clerk on Rupees four or

[1] Referring to the lower charges of Indian houses which transacted the greater part of the American trade in Calcutta even during the first quarter of the last century, Bracken observed, in the course of his evidence before the Select Committee of the House of Commons in 1832, "The English houses would charge probably 2½% on the purchase of an investment, and the native would not charge more perhaps than 1¾ per cent"

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five a month and rose to the position of one of the foremost merchants in Calcutta. He died in 1824, leaving a large fortune of about £400,000.[1]

Blockade by England and France.

The economy of management in the Indo-American trade was, however, of little avail against the general blockade declared by France and England against each other in 1806 and 1807. America hoped that if she could prohibit her own exports necessary for war purposes, England and France might be induced to revoke their measures against neutral commerce. With this end in view, in December 1807, America embargoed her own ports and expressly prohibited the trade of her own subjects, except under a special licence from the President of the United States. The blockade in Europe, however, was not removed. In March, 1809 America declared non-intercourse with France, England, and their allies. The result was a considerable falling off in the trade between India and America. The official reporter on the external commerce of Bengal observes in his Report for 1811–12 "with America our intercourse has almost entirely failed; the importation thence amounts to the trifling sum of S. R. 585,434 (£73,179) which includes S.R. 459,869 (£57,484) of specie." Even this declining trade came to end on account of the War between England and America from 1812–1814. On December 24, 1814 a treaty of peace was signed between the two countries and this was followed next year by a general peace in Europe.

Trade Resumed After Peace.

After the conclusion of peace, the Americans were the first among western traders to renew their commercial intercourse with India. The main features of their trade remained unchanged. Though bullion was their chief import, they sold in Calcutta bills on London to the extent of two to three hundred thousand pounds a year and purchased what they wanted with the proceeds.

But there was one important change. Indian cotton goods no longer formed the chief article of export to America. The reason is that Indian fabrics had been superseded partly by English and partly by American products. During the war with England, the American cotton industry underwent a rapid expansion. In 1808 there were 15 cotton mills in America, with 8,000 spindles. In 1815, the number of spindles rose to 130,000 and in 1830 it reached 1, 246.000.[2]

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[1] Evidence before the Select Committee of the House of Commons on the Affairs of the East India Company, 1833, Vol. II, p. 221.

[2] Lippincott—*Economic Development of the United States*, p. 203.

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With the progress of factory production, there was a decline in the price of cotton products. "In the United States the price of ordinary cloth for sheeting produced by the family weaver in 1815 was about 40 cents a yard; in 1830 it was about 8 cents a yard."[1] It was but natural therefore that the American demand for Indian cotton goods should fall off. On the other hand, the Americans brought to India a portion of those excessive supplies of English cotton goods which had been dumped into the U.S.A. after the restoration of peace.

The chief Indian exports to America at the time were indigo, silk, and saltpetre. This trade reached its high-water mark in 1818–19, after which year it began to decline.

Decline of Trade and its Causes.

The causes of this decline are not far to seek. The immediate cause was probably the severe crisis in America in 1818–19, but the deeper cause was her industrial development, the foundation of which had been laid during the war with England. This turned the attention of the U.S.A. from foreign commerce to domestic trade and industries. At the same time, the competition of other European nations who resumed trade with India, made the American trade with Continental Europe in Indian products less profitable. The high tariff in the U.S.A. from 1816 to 1842 tended also to discourage her foreign trade. In India, at the same time, the old handicrafts were on the decline, while for Indian food-grains and raw materials there was little demand in America.

America did require Indian gunnies (in those days woven in handlooms) even in the 'Thirties[2] of the last century, for wrapping round her bales of raw cotton. In 1850–51, out of 793,299 *maunds* of raw jute, valued at Rupees 1,970,715 and 9,035,713 pieces of handloom woven gunny bags and cloth, valued at Rupees 2,159,782 exported from Calcutta, North America took 9242 *maunds* of raw jute and 2,290,427 pieces of gunnies and gunny cloth.[3] But this American demand was not sufficiently extensive to maintain a large trade with India, for there was an alternative source of supply from Dundee where jute manufactures had been started as early as 1835.

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[1] Lippincott—*Op. Cit.*, p. 204.

[2] According to "*Comparative view of the External Commerce of Bengal during the years 1829–30 and 1830–31*" (Calcutta 1831) the chief articles of export to America on which there had been an increase, were indigo, saltpetre, silk piecegoods, shellac, gum, ginger, *gunnies* (italics are ours), hides and skins. Upon exports like tincal, borax, safflower, turmeric, there was a decline. Even in 1805, handloom-woven gunny was exported to America from Bengal.

[3] Wallace—*The Romance of Jute*, (second edition) p. 4.

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Trade in the 'Eighties.

In spite of America's industrial progress in the 'Eighties[1] of the last century, her trade with India continued to be small. The percentage of the total trade of India shared by America in 1884–85 was 3·07 as against 55·3 enjoyed by the United Kingdom.[2] The chief Indian exports to the U.S.A. at the time were indigo, hides and skins, raw jute, gunny bags and cloths and shellac. America and Australia were the chief markets for Indian gunny bags in those days. Out of 82·7 millions of jute bags[3] exported from India in 1884–85, 22·2 millions went to the U.S A., 18·7 millions to Australia, 17·6 millions to Straits Settlements and only 7 millions to the United Kingdom.[4] The amount of Indian gunny cloth exported at the time was small. In 1884–85, 15·3 million yards of such cloth were shipped from India and most of it went to the U.S.A. Indian tea was then an occasional export to America. The exertions of the Calcutta Tea Syndicate led to an increase in the export of Indian tea to America from 17,405 lbs. in 1878–9 to 676,507 lbs. in 1882-83 but this increase could not be maintained. The official reviewer of the trade of British India for 1884–85 observes "the efforts made to open a trade (in Indian tea) with the United States have been so far unsuccessful and Chinese and Japanese teas still hold their ground there." Up to the outbreak of the Great

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[1] The following table taken from the *Commerce Yearbook* 1928,Vol I, p. 15 (U.S.A. Government Printing Office, 1928) shows the progress of manufacturing industries in the U.S.A. :—

Year	Number of wage earners	Horse power of prime movers	Value added to materials	Wholesale price index
1869	2,054,000	2,346,000	1,395,000,000	135
1879	2,733,000	3,411,000	1,973,000,000	85
1889	4,252,000	5,939,000	4,210,000,000	83
1899	4,713,000	10,098,000	4,831,000,000	75
1909	6,615,000	18,675,000	8,529,000,000	97
1919	9,000,000	29,422,000	24,809,000,000	206
1925	8,384,000	35,735,000	26,775,000,000	159

[2] *Review of the Trade of British India,* 1884–85, p. XXII. America's share of the total trade of India in 1882–83 and 1883–84 were 2·89 per cent. and 2·35 per cent. respectively.

[3] It is interesting to note that of the 82·7 millions of jute bags exported, 4·9 millions were woven in hand-looms and the rest in power-looms.

[4] *Review of the Trade of British India,* 1884–85, p. LVI.

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War, the bulk of the tea imported into the U.S.A. came from Japan and China.[1]

Fifty years ago, the only important American export to India and which is even now one of the chief exports, was mineral oil. In 1878–79, the total quantity of American mineral oil, chiefly kerosene, imported into India was three million gallons, valued at Rs. 21 lacs. In 1882–83, it reached 20 million gallons, valued at Rs. 86·9 lacs. The total American export to India this year was worth only Rs. 93 4 lacs; in other words, mineral oil formed 93 per cent. of the total import from America. Mr. O'Connor writes in the *Review of the Trade of British India* for 1882–83, "this (American) oil has flooded the country, it has penetrated everywhere and is used very largely by natives of all classes to the great advantage of their domestic economy."

Competition of Russian Oil.

But in 1886–87 a small quantity of Russian kerosene was first imported into India. Though inferior in quality, it was cheaper, being imported in bulk from a much shorter distance than the American oil, packed in cans and wooden cases. By the end of the century, Russian oil dominated the Indian market, a comparatively small amount being imported from the U.S.A. to meet the demand of the Europeans in India and the wealthier classes of Indians.[2]

[1] The import of tea into the U.S.A. (values in thousands of dollars) from the leading countries is given below, from the *Commerce Year Book* 1926, Vol. I, p. 110:—

Total Import of Tea into United States of	1910–14.	1925.	1926.
America	16,732	31,454	31,349
From U.K.	3,180	9,334	8,173
„ China	2,898	2,586	3,016
„ Japan	7,957	6,456	6,898
„ British East Indies	1,721	9,357	9,152

[2] The quantity of kerosene imported into India during the decade 1896-97 to 1905-6, is given below, in thousands of gallons:—

	1896-97	1897-98	1898-99	1899-1900	1900-1	1901-2	1902-3	1903-4	1904-5	1905-6
Russia	45,484	50,634	50,800	57,688	67,351	84,478	71,125	57,320	40,304	7,617
U.S.A.	18,202	23,985	21,006	12,732	5,102	5,768	9,229	6,722	7,477	22,332
Borneo	...	...	...	...	...	...	...	2,372	9,281	5,193
Straits Settlements	164	597	323	42	143	1,023	522	3,783	11,969	10,391
Sumatra	558	7,541	4,444	...	...	...	286	1,348	5,943	5,401
Other Foreign Countries	63	38	52	8	6	198	289	14	1,216	15
Total for Foreign Countries	64,471	82,795	76,625	70,470	72,602	91,467	81,451	71,559	76,190	50,949
Coastwise from Burma	40	1,709	2,308	4,966	8,269	13,463	17,450	35,206	42,729	47,160

(From the *Review of the Trade of India* in 1905–6, p. 15.)

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As the chief import from America was thus affected by Russian competition, the import trade became stagnant.[1] The export trade showed also no tendency to increase. The official reviewer of the trade of British India for 1898–99 writes, "the Americans do not now take Indian linseed.....Indigo is in a stationary condition, and tanned skins are in declining demand. As a set-off the trade in gunny cloth has ..... more than doubled in five years and an increase in raw skins has compensated for the reduction in the demand for tanned skins."

Growth of Trade from 1905–6.

From 1905–6, the Indo-American trade showed on the whole a steadily upward tendency.[2] In that year the Standard Oil Company of America regained its position in the oil trade of India. The Baku riots of 1905 led to a considerable falling off in the production of Russian oil and from that time its export

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[1] The exports and imports in Indo-American trade during the quinquennium ending in 1898–99 are as follows :—

Year.	Value of mineral oil imported into India from the U.S.A. in tens of rupees.	Value of total import into India from the U.S.A. in tens of rupees.	Value of total Indian export to the U.S.A. in tens of rupees.
1894–95	975,522	1,106,441	5,842,397
1895–96	963,371	1,139,438	5,913,896
1896–97	907,391	1,466,949	4,818,498
1897–98	1,080,520	1,431,075	5,876,095
1898–99	954,919	1,362,670	5,387,304

The above table is based on figures taken from the *Review of the Trade of India*, 1894–95, p. 67 and 1898–99, p. 58.

[2] Share of the U.S.A. in the import trade of India :—

1901–2	1902–3	1903–4	1904–5	1905–6	1906–7	1907–8	1908–9	1909–1914
1·4%	1·5%	1·5%	1·1%	2·2%	2·4%	2·5%	2·7%	3·1%

Share of the U.S.A. in the export trade of India :—

1901–2	1902–3	1903–4	1904–5	1905–6	1906–7	1907–8	1908–9	1909–1914
6·9%	6·7%	6·0%	6·3%	8·2%	9·0%	7·8%	8·8%	7·5%

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has not been large, the bulk of the reduced output being consumed in the domestic market.[1] From 1905 the policy of the Standard Oil Company has been to follow the prices fixed in India by the Royal Dutch and the Burmah Oil Company's organization. The high prices maintained by this combination and the superior quality of American oil, have enabled the Standard Oil Company to supply the bulk of the kerosene which is now imported into India.[2] Apart from this activity in the oil trade, the American business concerns made no systematic attempt before the Great War to expand their trade with India. In spite of this, America was the third in order of importance among foreign countries, having trade with India, during the quinquennium 1909–14. Her trade, during the period, was exceeded only by the trade of the United Kingdom and of Germany and was closely followed by the share of Japan.

During that quinquennium, America's average annual shipment to India, amounted to Rs. 449 lacs out of which about 49 per cent. was mineral oil and the rest consisted chiefly of iron and steel, raw cotton, cotton piecegoods, hardware, machinery and motor vehicles. The average annual exports to America during the period were raw hides and skins of the value of Rs. 349 lacs, raw jute valued at Rs. 233 lacs and gunny bags and cloth worth Rs. 784 lacs out of the total average export amounting to Rs. 1684 lacs.[3]

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[1] During the last few years a large quantity of Russian oil was imported into India by the two rival combinations which are now contending for the Indian market. During the three years ending in 1925, the Asiatic Petroleum Company, a subsidiary of the Royal Dutch Shell Group, imported into India and Ceylon 23,880,000 imperial gallons of Russian oil and up to the end of 1927 the Standard Oil Trust imported 21,000,000 imperial gallons of Soviet oil into India. It was the import of this oil that led the Royal Dutch Shell Group to declare the kerosene price war of 1927 against the Standard Oil Company. (See *Representations received by the Indian Tariff Board . . . regarding the grant of protection to the Oil Industry*, Vol. I (1928), p. 95.

[2] The following table shows the import of kerosene oil into India from the U.S.A., during the three years ending in 1926–27 and in the pre-war year 1913–14, in thousands of gallons.

	1913–14	1924–25	1925–26	1926–27
From the U.S.A...	42,311	54,224	56,249	55,585
Total import from all foreign countries	68,850	71,980	79,222	64,050

The coastwise imports of kerosene oil from Burma to India amounted to 130 million gallons in 1926–27 as compared with 128 million gallons in 1925–26 and 124 million gallons in 1924–25. Thus about two-thirds of India's requirement is supplied by Burma and of the remaining one-third the great bulk comes from the U.S.A.

[3] *Review of the Trade of India* in 1926–27, p. 175.

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Rapid Expansion since the War.

Though the chief items of export and import have changed but little, the value and volume of the American trade with India have increased much since the outbreak of the World War. This tendency is found in America's trade with other Asiatic countries also. The proportion of American exports going to Europe was 76. 7 per cent. of the total export trade of the U.S.A. in 1896-1900. This declined to 47. 6 per cent. in 1927 whereas American exports to Asia increased during the same period from 3.9 to 11.5 per cent. In the import trade also, Europe's share declined from 52.6 per cent. in 1896–1900 to 30.5 per cent. in 1927 but Asia's share rose from 14.6 to 30.0 per cent. during the same period.[1] In fact, America's trade with all the continents other than Europe improved during the last 27 years. This change in the distribution of American trade is mainly due to her transformation from an agricultural to a predominantly industrial country. She has established to a much greater extent than before the War direct trading with non-European sources of the supply of raw materials which formerly reached her through Europe. She has started also trade organizations of her own in the East. "Before the War," writes Mr. Ainscough, "there were practically no American merchant importers of high standing in India. The last few years, however, have witnessed the opening of a few large firms, who are already doing a considerable trade."[2] Improved shipping and banking facilities between the United States and India have also largely contributed to the expansion of trade. In addition to these factors, the outbreak of the War led the Indian importers to substitute Japanese and American goods for those which had formerly been supplied by Europe. The progress of trade since the War, may be seen from the table on the next page.

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[1] *Commerce Year Book*, 1928 (U.S.A.), Vol. I, Table 20, p. 114.

[2] Ainscough—*Report on the Conditions and Prospects of British Trade in India at the close of the War* (1919) p. 13.

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Countries.	Pre-war Average. 1909–14.			War Average. 1914–19.			Post-war Average 1919–24.			1925–1926.			1926–1927.			1927–1928.		
	Imports.	Exports including re-exports.	Total trade.	Imports.	Exports including re-exports.	Total trade.	Imports.	Exports including re-exports.	Total trade.	Imports.	Exports including re-exports.	Total trade.	Imports.	Exports including re-exports.	Total trade.	Imports.	Exports including re-exports.	Total trade.
	Share per cent.			*Share per cent.*			*Share per cent.*			*Share per cent.*			*Share per cent.*			*Share per cent.*		
United Kingdom ..	62·8	25·1	40·0	56·5	31·1	41·2	57·6	21·2	39·5	51·4	21·0	32·1	47·8	21·5	32·8	47·7	25·4	34·9
U.S.A.	3·1	7·5	5·8	7·0	11·9	9·9	8·5	12·0	10·4	6·7	10·4	9·0	7·9	11·1	9·7	8·2	11·2	9·9
Japan	2·5	7·5	5·5	10·4	11·2	10·9	6·9	13·3	10·4	8·0	15·0	12·4	7·1	13·3	10·7	7·2	8·9	8·1
Germany	6·4	9·8	8·5	·7	·9	·8	2·8	4·9	4·0	5·9	7·0	6·6	7·3	6·6	6·9	6·1	9·8	8·2

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Permanent Increase.

It appears from the table that the U.S.A., after a temporary decline in 1925–26, more than regained during the last two years her average import during the War period. This Post-war development of American trade is somewhat different from the progress of Indo-American commerce at the beginning of the last century. The latter was due not to America's industrial strength but to some fortuitous causes. As soon as those causes disappeared, American trade declined. But the progress of the trade of the U.S.A. since the outbreak of the Great War, is due not merely to the temporary diversion of trade from the belligerent nations. It is mainly due, so far as the export of American manufactures is concerned, to the factors that have brought about mass production in the U.S.A. with the consequent reduction of prices. A substantial part of the recent American trade with India has, therefore, come to stay.

Competition Between England and America.

About a hundred years ago, John Bell in "*A Comparative View of the External Commerce of Bengal during* 1830–31 *and* 1831-32" observed, "The trifling attempt at rivalship (with England) which America has yet displayed in this market, ought to be no indication of her future inability". At present, American competition with English goods is keen in certain branches of Indian trade. "The outstanding features of the year", writes Mr. Ainscough in his Report for 1927-28, "have been intensified American competition in machinery, motor cars, rubber tyres, electrical apparatus and fents".

Of these items, machinery constitutes an important element of the British trade with India. Machinery and millwork contributed 10.5 per cent. of the total British imports to India in 1927-28. Though the share of the United Kingdom in this trade is now less than it was in 1913-14, she improved her relative position in 1927–28, as compared with the previous year.[1] In the chief Indian industries like cotton, tea and jute, the machinery now in use is almost entirely British. Other things being equal, the demand for the type of machinery with

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[1] The shares of the three chief suppliers in the trade in machinery before the War and during the last 2 years have been as follows :—

	1913–14	1926–27	1927–28
United Kingdom	.. 90 p.c.	78.2 p.c.	78.5 p.c.
U.S.A. ..	.. 3 p.c.	10.2 p.c.	10.1 p.c.
Germany ..	.. 6 p.c.	7.0 p.c.	6.7 p.c.
Other Countries	.. 1 p.c.	4.6 p.c.	4.7 p.c.
	100 p.c.	100 p.c.	100 p.c.

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which industrial workers are already familiar, will naturally continue. American competition has touched only the fringe of the machine trade of India and is generally keen only in those types of machinery where "low first cost rather than quality and efficiency is the desideratum". But "the British machinery manufacturer" as Mr. Ainscough observes in his latest report, "enjoys a very high reputation in the market, his selling and technical organisation in the country is second to none". Excepting agricultural machinery,[1] the demand for which is limited in a land of small holdings like India, America is not likely to capture in the near future any substantial part of the trade in machinery.

In the automobile trade, America now holds a predominant place.[2] The size of the American domestic market, unimpeded by tariff barriers, has enabled her to make mass-produced cheap cars and commercial vehicles on a scale, which is not yet possible in any other country. But the output of British motor industry has increased much in recent years, with the result that the prices of cars and commercial vehicles in 1928, corrected by the cost of living index, are 50.1 per cent. and 38 per cent. respectively below the pre-war level.[3] Though the lowest priced British car is still more expensive than certain cheap American cars yet the superior finish and durability[4] of the former are increasing its sales in India. Excepting Morris cars, which are as nearly mass-produced as is possible in Great Britain, British and American cars cater for the requirements of different classes of consumers in India and the range of direct competition between the two kinds of cars is limited. The same remark is applicable to the trade in British and American lorries and buses. The more costly and heavy British vehicles have a sale among certain British firms in

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[1] In the production of agricultural machinery, America has a decided advantage of mass production due mainly to the enormous size of her domestic market.

[2] It may be noted here that the American position is strong in the trade in motor cars and commercial vehicles but not in motor cycles. The reason is that the domestic market for American motor cycles is very limited and mass production is not possible there to the same extent as is carried on in automobiles. Thus, the total output of passenger cars and trucks in America in 1927 was 3,394,000. Out of this enormous production only 11.3% was exported. The total output of motor cycles in America in 1925 (figures for later years are not available) was only 39,000 and of this 59% was exported.

[3] *The Motor Industry of Great Britain*, 1928, by the Society of Motor Manufacturers and Traders Ltd. p. 77.

[4] According to *the Motor Industry of Great Britain*, 1928, the average life of British cars is 11 years. The National Automobile Chamber of Commerce, U.S.A. in their *Facts and Figures of the Automobile Industry*, 1928, observe that the average life of American cars is 7 years. In India, the average life of both British and American cars is somewhat lower but there is no doubt that the British car is more durable.

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India, while the Indian concerns prefer cheap American and Canadian vehicles having a much shorter life. There is thus no immediate possibility of America ousting Great Britain from her share in the automobile trade of India.

The remaining items like rubber tyres, electrical apparatus, cinematograph films, rubber soled shoes, toilet requisites and fents in which American competition is now very active, do not need any detailed discussion. They contribute at present about 3 per cent. of the total British import trade with India. Even if America succeeds in capturing the entire trade in these products from the United Kingdom which, however, is unlikely, the total British trade with India will hardly be affected.

But there are indications that in a more distant future America may prove a serious competitor of Britain not in the minor items of trade which now attract so much attention but in the more important products like iron and steel and cotton goods, which constitute at present about 51 per cent. of the British exports to India. At present American competition in these goods in the Indian market is insignificant.

But the U.S.A. is the only country in the world which has now a cotton industry comparable in size with that of the United Kingdom. In 1926, the former had 32.2 per cent. as against 33.3 per cent. of the world's cotton looms in the latter.[1] It is true that the greater part of American cotton goods is consumed in the domestic market and only a small surplus is available for export. But the mass production of cotton goods is only in its infancy in America. It appears from a recent article in the *Statist* that "it is only now that American cotton manufacturers are turning their attention to the export trade, owing to an increasing output due to the erection of more spindles and the greater frequency of double shifts".[2]

England still maintains her superiority in high grade cotton goods in which she finds a market even in the U.S.A., but in the cheaper standardised products, America is a formidable competitor of Britain in Canada, Mexico and South America. American cotton goods have already displaced British stuffs to some extent even in South Africa. She has gained also a small footing in Australia and New Zealand. One will not be surprised if she turns in future her attention to the piecegoods market in India.

The position of the British iron and steel industry is weaker than that of America. England's supremacy in this industry during the last century was mainly based on the abundance of coal and iron in close proximity. But, with the working of deeper mines, the cost of production of coal is

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[1] Balfour Committee's *Survey of Textile Industries* (1928), p. 65.
[2] *The Statist* dated Dec. 1, 1928, p. 1018.

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steadily rising in Britain and she is already dependent on foreign countries for more than one-third of her supply of iron ore.[1] It is true that the American iron and steel industry is at present mainly concerned with its home market and its competition in the foreign market, with the exception of Canada, is of a limited character. But the Balfour Committee on Industry and Trade rightly observe, "the extent of American resources in coal and iron ore, and the rapidity with which the industry is expanding to meet domestic demands, make the United States a factor of great potential importance in the world's market for iron and steel".[2]

The present tendency of American trade indicates also the possibility of her future competition in iron, steel, and cotton goods. Direct trade between India and America has increased since the outbreak of the Great War, but a substantial part of the trade between the two countries is even now triangular. As is well known, Indian exports to America considerably exceed the imports in value. A part of this favourable balance is liquidated by the shipment of American raw materials and foodstuffs to Britain which sends her own manufactures to India. These create the credits with which a part of the excess of Indian exports to America is paid. As the U.S.A. becomes more and more industrialised, she may pay for the excess of Indian exports, not by sending raw materials to Britain, but with the direct shipment of American manufactures to India. For this, not automobiles and typewriters and such other commodities, the demand for which must necessarily be limited in a poor country like India, but cheaper grade cotton goods and iron and steel products will be the most suitable imports.

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[1] The output of iron ore in the United Kingdom and the amount imported in recent years are tabulated below from certain figures in the *Survey of Metal Industries*, p. 117 :—

	Output of U. K. (*in thousands of tons*).	Import of iron ore (*in thousands of tons*).
1913 ..	15,997	8,028
1924 ..	11,051	6,187
1925 ..	10,143	4,588

[2] *Survey of Metal Industries*, p. 89.

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Some Geographical Observations in Western Tibet.

By S. R. Kashyap.

The present paper describes some of the more important observations connected with the geography of Western Tibet, which are either new, or amplify, or correct the observations of previous travellers. I visited the country first in 1922, and then a small portion of it in 1923, and then again quite a large portion in 1926. The observations recorded in this paper relate to the first and the last journey only. I would like to say that these journeys were not undertaken for geographical exploration, nor did I take any equipment for this purpose with me. The observations were made only incidentally and the equipment consisted of a photographic camera, a compass, a measuring tape and a hypsometer with a few thermometers.

In 1922, I had four professors of the Khalsa College, Amritsar, with me, *i.e.*, Professors B. R. Chatterji, Kashmira Singh, Charan Singh and Harkishen Singh. In 1926, I travelled alone, with two servants.

By Western Tibet we understand the country to the north of the Himalayas, situated along the Sutlej, the Indus, and their tributaries, extending from the watershed between the Sutlej and the Brahmputra westwards to Kunawar in Bashahr State. This paper relates only to the upper Sutlej valley and does not include the Indus valley. This country is exceedingly interesting in many ways. It is situated at a very high altitude, and some of the portions are amongst the highest inhabited parts of the world. The climate is exceedingly rigorous, being very dry and cold, and is characterised by very strong dry cold winds. On account of the very high wall of the Himalayas the monsoon does not penetrate into the interior, and consequently there is very little rain-fall. Even in winter the snow-fall is not much, but the temperature falls very low, and the dry cold is intense. As a consequence of this the fauna and the flora are represented by very few species; the species present, however, are characterised by very interesting features.

The country is also interesting on account of the sanctity in which it is held by the Hindus and the Buddhists all over Asia because of the holy lake, Manasarovar, and the famous mountain, Kailas, which are held sacred by the followers of both religions.

The third reason which makes the country very important lies in its hydrographical characters. Round about the Mana-

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sarovar lake lie the sources of four great rivers: the Indus to the north, the Brahmputra to the east, the Karnali to the south, and the Sutlej on the west.

On account of all these important features the country has had a great fascination for travellers; but the difficulties of travel are so great on account of the rigorous climate, desert nature of the country, lack of provisions and even fuel, that very few foreigners have been able to penetrate into it. Even the people of the higher Himalayas who go there to trade with the Tibetans at the few trade marts, do so only during the short summer, as the passes are closed during the rest of the year, and therefore the trade marts are also deserted except for the short period of two months or so and in some cases even less.

Sven Hedin in his "Southern Tibet" has given a very comprehensive account of the history of travel in this region, and so great is the importance of this region that out of four volumes of his work dealing with this subject more than 2 deal with the Manasarovar region. Father Desideri is said to be the first European to see and describe the Kailas in 1715. Moorcroft visited Manasarovar in 1812, Strachey travelled in this part in 1846, Rawling and Rider passed through this region in 1905 on their way from Lhasa to Simla, Sven Hedin spent a good deal of his time here between 1905-07, and Sherring paid a short visit to the country in 1907. These are the chief travellers who have left records of their journeys.

In 1922, I entered the country from Bians *via* the Lipulekh Pass, 16,780 ft., which I crossed on the 19th July; thence I went to the trade mart at Takla Kot, thence to the holy lakes Rakastal and Manasarovar, then a little to the north to the Kailas, and after going round it went westwards to the trade mart at Gyanima, thence to the famous monastery at Tholing which is the biggest monastery in Western Tibet, and then re-crossed the Himalayas by the Mana Pass, 17,890 ft., on the 23rd August, reaching Badri Nath, the well-known place of pilgrimage in Garhwal. Thus I spent five weeks in the country and travelled about 250 miles from east to west.

In 1926, I entered Tibet again by the same pass but this time passing through the Darma Valley. I entered Darma a little above Dharchula, went up the Darma Ganga and crossed into the Kali Valley by the Joling Kang Pass, which is exceedingly steep on the Darma side and is one of the most difficult passes that I have crossed. I crossed the Lipu Lekh Pass on the 10th July. After this, passing through Takla Kot, visiting the two lakes and circumambulating the Kailas, I visited the very unfrequented monasteries of Dolchu and Tirthapuri and reached Gyanima. From here I re-crossed the Himalayas into Johar (Almora District) by the three passes Kungri Bingri, Jayanti, and Unta Dhura. The three passes have to be crossed

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in one day and this was done on the 6th August. Thus I spent nearly 4 weeks in that country.[1]

After these introductory remarks I take up some of the more important observations made during these two journeys. The observations fall into 4 groups, namely:—

1. The source of the Sutlej and the channel between the Manasarovar and the Rakastal lakes.
2. The circumambulation of the Kailas with special reference to the Dama La and Gauri Kund lake.
3. The hot springs at Tirthapuri.
4. The three passes to Johar.

1. The source of the Sutlej and the channel between the Manasarovar and the Rakastal Lakes.

As is well known these two lakes are situated side by side at an altitude of about 15,000 ft., the eastern one being known as Manasarovar or Mabang in Tibetan and the western Rakastal or Lagang in Tibetan. For a long time, there has been a great controversy about the channel connnecting these two lakes but it is now generally accepted that a channel does exist between the two lakes though it has been occasionally denied. The only question of importance is whether the channel contains water at fairly frequent intervals or not. Sven Hedin has given all the historical information available up to 1913, in his "Southern Tibet." Strachey who visited the place in October 1846 states that he came upon a "large stream 100 feet wide and 3 feet deep, running rapidly from east to west, through a well defined channel. This was the outlet of Manasarovar". Rider visited the same part in 1905 and says:—"Skirting the lakes we rode across the low hills, which close in on the western side, to look for the outlet, which Moorcraft had not been able to find, which Strachey had found, and Mr. Savage Landor had claimed to have discovered did not exist. We struck the channel a mile below the outlet, a small stream only partly frozen over, this we followed up and found that it did not flow from the lake but from a hot-spring, at which we found and shot some Mallards. We then followed a dry Nullah to the lakes and proved that Strachey was, as was to be expected, quite correct. No water was flowing at this time of the year, but the local Tibetans all agree that for some months in each year there was a flow during the rainy season and the melting of the snows, *i.e.*, about from June to September. As a rise of about two feet in the level of the lake would cause water to flow down the channel this appears quite worthy of the belief. The length of the

[1] Mr. H. Ruttlege, I.C.S., then Deputy Commissioner of Almora, was on an official visit in Western Tibet this year and we travelled together for many days.

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channel between the two lakes is about three miles". Rawling did not visit the lake, nor did he pass along the bridge between the two lakes.

The fact is that the Manasarovar lake, more or less oval in outline, is surrounded on all sides by mountains, except for a gap at its north-west corner. The ridge between the two lakes is not very high. At the place where the gap begins there is a monastery (Jiu monastery) perched on a cliff on the northern side of the gap, the ground consists of gravel, and water could certainly flow from the Manasarovar lake to the Rakastal lake through this gap. In 1922, on the 28th July travelling from Gossul-Gompa along the bank of the Manasarovar lake for a few miles and then turning to the left I crossed this channel at some distance from Manasarovar, where there are some hot-springs forming a small stream flowing west. Our party crossed this stream by a small bridge, but there was no water coming from the Manasarovar. In 1926, I camped on the bank of Rakastal on the 17th July. Next day I crossed the intervening ridge to the Manasarovar, and camped on its bank near Gossul-Gompa. From this camp I went along the bank of the lake northwards and camped near the bank under the Jiu-Gompa, just at the beginning of the channel. The ground near the bank at this place consists of gravel as already stated, and scattered here and there from the bank of the lake along the bed of the channel were several small ponds. The first pond was at a distance of 50 feet from the margin of the lake. The water at the north-west corner was shallow for a long distance along the bank (more than a mile) and far into the interior of the lake. The ground separating the nearest pool from the lake was not more than 6 inches above the water and it was clear that a rise of about 6 inches in the level of the lake would make the water flow into this pond and then to the next, and so on a continuous stream would be formed. At this corner the gravel formed a plain about 1½ miles long along the bank and bounded by low hills which converged to the channel between the Jiu-Gompa and the opposite hill. The distance between the bank of the lake and the foot of the gompa hill is a little more than half a mile. Next day I travelled for a long distance along a path more or less parallel to the channel and camped at Barkha. Sherring states that the channel is about 3 miles. Sven Hedin makes it 6 miles. So far as I could judge the channel is about 3 miles long.

Meteorological observations on the bank of Manasarovar near Gossul-Gompa were as follows:—

Time: 7-15 A.M., 19th July, 1926, weather calm and clear.

Air temperature	..	.. 9°.5 C.
Temperature of lake water		.. 8°.9 C.
Boiling point	..	.. 85°.0 C.

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So far my own observations. I was, however, told by very reliable people, Bhotias (Bians people), whom I had known for some years and who had been in Tibet in 1924-25 that the channel contained water flowing from the Manasarovar to the Rakastal in both these years. A lady, well-known, both in Bians and Johar and who had been to the Manasarovar lake no less than seven times told me that in 1924 she had actually crossed that stream on a yak along with other people and that the flow was so swift that she was afraid of being washed away and that the water came up to the abdomen of the yak. Similarly, my guide in 1926—a man from Gunji (Bians)—told me that he had crossed the stream in 1925. I am in a position to add to these statements still more recent information. Last summer (1928) a professor from a Lahore College went to Western Tibet, visited Manasarovar, went round the Kailas and followed my route of 1922. He tells me that in the middle of August 1928, he crossed the channel between the two lakes in which a stream about three feet deep was flowing. The name of the gentleman is D. P. Rai, and he formerly belonged to the Dev Samaj College.

It is clear, therefore, that whatever the conditions may have been formerly, there has been a connection between the lakes during recent years, *i.e.*, 1924, 1925, 1928. and that in 1926 a rise of six inches in the level of the lake would have made the water flow in the channel. Sir Sydney Burrard, considering the evidence available up to 1907, decided that year to include the lake basin of Manasarovar in the catchment area of the Sutlej. The evidence available since that date, as stated above, certainly confirms his conclusions.

There is no evidence whatsoever that any water has flown out of the Rakastal for a very long time. It is probable, however, that there is an underground flow of water from the eastern to the western lake and from the latter into the source stream of the Sutlej. The amount of the water flowing into the Manasarovar from the Gurla Mandhata and the other surrounding mountains is considerable, and as there is no outlet from the Manasarovar in some years, it is difficult to believe that evaporation alone can account for the loss of an equal quantity of water. There must be some underground flow, and this belief is confirmed by the presence of stagnant water in the channel itself. Some miles to the west of Rakastal at Lalingta I found a very small stream of water flowing westward, broadening into a fairly large pond at this place, but after some distance ultimately disappearing into the soil. In 1926, again there was no flowing stream along this channel above Dolchu which is about 20 miles from the foot of the Kailas. I was repeatedly told by the people that between Rakastal and Dolchu flowing water appears and disappears repeatedly. At Dolchu itself the Sutlej is quite a regular stream, which flows on uninterruptedly further on. This would indicate that there is an

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underground flow from the Rakastal. In 1926, I crossed this stream at Dolchu where it was 5 to 10 feet wide and 1 to 1½ feet deep. There is a very small spring just under the monastery here and I was told that a much bigger spring a little higher up is the main permanently visible source of the stream.

2. Circumambulation of the Kailas.

Going round the Kailas is considered an act of great merit and of course all pilgrims go round bare-footed. The circuit takes about 2½ days and I have come across people who had done this circuit 10 times. There was one man from Lhasa, who was staying at Darchin, at the foot of the mountain, to complete full 12 rounds, which would take about one month. I have done the round only twice. Some *sadhus* and devout people measure the length with their body, lying prostrate, and as the path is very rough and stony it is an exceedingly, austere performance. The Kailas peak is conical, 21,800 ft. high, covered in its upper portion with perpetual snow, and has absolutely vertical walls in the lower parts. The peak is not actually on the long range of mountains known as the Kailas range, but is situated a little to the south of the range with which it is joined by a high ridge about 18,600 ft in altitude at the lowest place. This ridge has to be crossed in going round the mountain. Sherring thinks that the circuit is about 25 miles but he did not actually go round the mountain; Sven Hedin makes it about 30. My own estimate is 29 miles. During the circuit one meets with four monasteries on the four sides of the mountain. The circuit begins from the south side at a place called Darchin, though the actual first monastery is situated higher up in the interior and rather less than a mile above Darchin. It is very seldom visited by pilgrims, and Sven Hedin himself, who gives a very detailed account of the whole circuit around the mountain, says that he did not visit it. This monastery is called Kiangda (also spelt by different people as Gyangta). I visited this monastery on the 24th July, 1926 Unlike the other monasteries which are built in the side of the mountain it is situated on an eminence and has a commanding position. It is a solid, substantial, square building and undoubtedly the finest and the best furnished of the four monasteries. The monastery has some old armour, helmets and swords, in addition to the usual paraphernalia. The circuit of the mountain is usually done in a clock-wise manner. From Darchin the next monastery, the Nyandiphu, is four miles. After going north-west for the first two miles the road turns to the north. This second Gompa is perched along the vertical side of the rock and has two big elephant tusks inside. It is situated in a very perilous position as there is a danger of the rocks falling from above. I was told that some years before a big rock did

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actually fall down and destroy a part of the building. Just before the Gompa there is a gateway and a little beyond this two small wooden bridges on the stream coming from the north are crossed to reach the Gompa. From here the road runs on both sides of the stream. The road up to this monastery is on good firm ground, but further on it becomes stony. The valley is fairly open, but the rocks on both sides are steep and vertical, of a sepia colour, and there are small water-falls coming down from them. The rocks have fantastic shapes, resembling forts, battlements, etc. From Nyandiphu-Gompa the road runs straight north for about 5 miles, then it crosses two branches of the stream coming from the north, from the Dungdung pass beyond which is the country watered by the Indus. Both the streams had to be forded, though the second had a small bridge formerly; this was, however, broken at the time, though there was another bridge higher up. The Kailas peak had been visible up to the Nyandiphu-Gompa, after which it was mostly hidden and only occasionally visible. Its western face had a lot of snow. A cornice at the top could be seen projecting like the edge of an umbrella. After crossing the stream the road turns to the east, and the Didiphu-Gompa is a little more than a mile from here. I was now north of Kailas. The north face of the Kailas is extremely steep, with very little snow and formed of a vertical black rock. I camped just below the Gompa. Here there is a huge piece of rock with the Tibetan prayer, "Om mani padme hum" engraved on the surface. The ground at this place forms a rectangle with more or less parallel sides. On the west the straight wall has at its base the stream mentioned above coming from Dungdung and which I had crossed just before reaching this Gompa and which joins the stream running along the base of the Kailas first westwards and then southwards. On the east, one sees a similar wall again with a stream coming from the north and joining the Kailas stream. At the back on the north there is another straight wall with the Gompa in front. On the south there is the Kailas with its snow-covered top and black surface below, with patches and lines of snow. In front of this cone to the north on each side there is a smaller bare conical hill. The west one ends at the stream up which I had travelled and a small stream flows between the Kailas and this conical hill. Another stream flows on the east side of the eastern cone. Beyond this last stream there is another elongated (north-south), rather truncated hill with one more similar but much more elongated (north-south) and snow-covered hill lying still further with streams on both sides. The eastern wall of the rectangle as seen from the monastery appears to end near the last but one southern ridge mentioned above; the last southern ridge is a little beyond this and is not visible from the monastery. All these streams from between these gorges unite and flow in front of the camp in a fairly

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broad stream. In going to the next stage one has to cross the stream coming from the north and then go up the small stream to the east of the last ridge. At the Didiphu-Gompa camp on the 23rd July, 1926, the meteorological observations were as follows :—

Time	.. ..	.. 8 A.M.
Air temperature	..	.. 7°.2 C.
Boiling point	..	.. 83°.6 C.
Weather	..	.. Calm and clear.

In 1922 when I camped at this place on the 30th July we had a fairly heavy fall of snow at night and hail and rain for part of the journey next morning. During a large part of the journey that year it had been cloudy and rainy, and although I had a fine view of the Kailas at Barkha, a few miles before Darchin, I never had a glimpse of the mountain after that because either I was too near it or it was hidden by clouds. In 1926 except for a few drops of rain and some small hail-stones near the Nyandiphu-Gompa it was perfectly clear up to Gyanima.

From Didiphu the next stage, the Zuntu monastery (called Zutulphu also), is about 13 miles over the Dama La (written by some as Dolma La), which is on the ridge that joins the Kailas peak to the Kailas range. The height of this pass is given as 18,599 ft. Of this stage Sven Hedin gives a full description as usual, but since his observations do not coincide with mine I will quote at some length from him. "Southern Tibet" Vol. IV, p. 373, has the following, "Sherring gives a short description of the pilgrimage around the Kailas, but it does not appear from his narrative whether his communications are derived from his own observations or from the native informants. Nor does his map say anything as to his own route, for it has all the trade routes marked in red. Concerning the road from Tarchen (or Tarchan) and back to Tarchen, he says, the circuit is about 25 miles, *i.e.*, 40.2 km. In reality it is 48.4. His description is interesting as it was probably the single one existing before my journey. He says ("Western Tibet" p. 297 *et seq.*) 'The actual circuit round the holy mountain of Kailas—occupies on an average 3 days, the distance being about 25 miles. The path is not good, walking is absolutely obligatory, and the track rises in one place to a very great height, namely, to the Gauri Kund, which is a lake that remains frozen at all times of the year, even in the hottest weather....ordinarily the first monastery visited is the one at Nendiphu (Nyandiphu).... The next monastery is at Didiphu (Diripu), and thence the road goes *via* the Gauri Kund frozen lake to Zutulphu (or Jamdulphu), (*i.e.*, Tsumtulpu).... Darchan is the spot where the circuit begins and ends.' The description is fairly correct. 'The very great height' is not at Gauri Kund but at the pass, Dolmala, 4 km. west of the lake. A

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European who had made a journey would never have omitted to mention the pass which is by far the most striking experience the whole way around the Kailas".

On page 375 we have:—"A moment later we reached the Didigompa with a gigantic block in front of it and the holy formula engraved on the surface of the latter. Here....the altitude is 5,091 m. The blocks lying about everywhere in the region consist of granite (quartzbiotite-biorite). The next day's march on September 4, took us 17.5 km. S.E., E.S.E., S.E., and finally, S.S.W., around the northern parts of the Kailas massif. From Diripu-Gompa we had 1.3 km. S E. to the pass Dolmala, one of the highest we had to cross on the whole journey in Tibet, being 5,669 m. high or 578 m. above camp. The rise is, therefore, if taken on a direct line, enormous, or as 1 : 2.25, which was the sharpest gradient I ever had. One had to ascend one m. for every $2\frac{1}{4}$ m. of road. As such a slope is too hard for riding animals, one has to take the ascent of the pass in zigzags. On the southern side of the pass we had 16.2 km. to camp CCXXXII, Tsumtul-pu-Gompa where the altitude is 4,863 m. being a descent of 806 m. and a fall of 1 : 20.1". In "Trans-Himalaya," Vol. II, p. 201–202, no details of the distance of the journey round the Kailas are given. He simply states "From the pass we descended among boulders to the tiny round lake Tso-kavala". "IN MY LIFE AS AN EXPLORER" page 425 (1926), he states, "From Dolmala our road ran steeply to the pool of Tso-kavala, which is always frozen over". In "Southern Tibet," Vol. IV, p. 413, he gives the altitude and the distances and among them are the following :—

Place.	Distance from last stage.	Altitude.	Rise or fall in metres.		Rate.
Diriphu-Gompa.	..	5,091			
Dolmala.	1.3 km.	5,669	Rise of	578	1 : 2.25.
Tsumtul-Gompa.	16.2 km.	4,863	Fall of	806	1 : 20.1.

It appears also that he had no intention of giving a description of the circuit of the Kailas, when he began writing his "Southern Tibet". It was an after-thought. In the preface (Vol I, p XII) he says, "My own journey has been described as succinctly as possible with indications only of its chief characteristic traits. Certain parts have not been mentioned at all. Thus, for instance, I have altogether omitted the voyage round the Kailas for the reason that I had given quite a sufficient account of its features already in my popular work "Trans-Himalaya." Yet we find in Vol. IV, p. 371, the chapter entitled, "THE PILGRIMS ROAD ROUND THE KAILAS", containing a detailed description.

Starting from the Didiphu-Gompa the road crosses the stream from the north by a bridge, after which there is a rather

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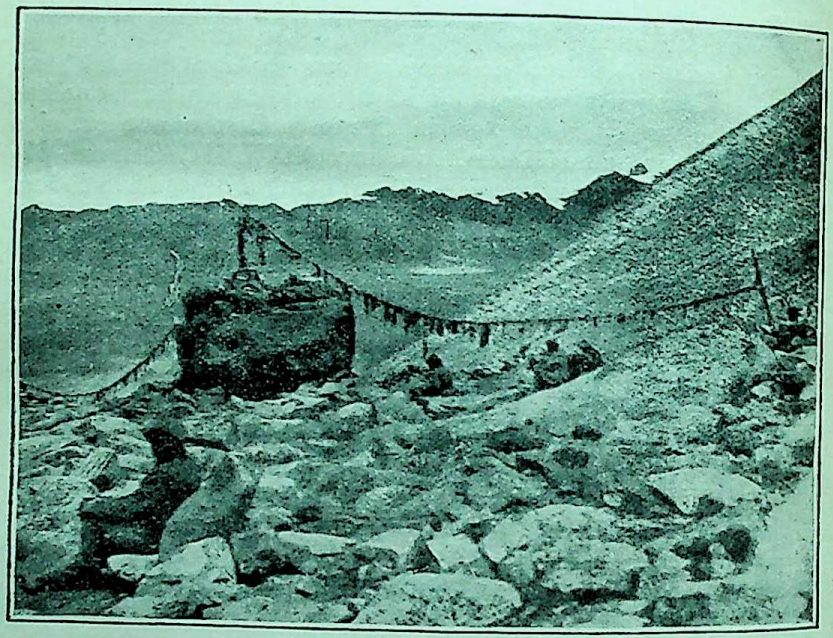
steep ascent for about a mile to the east. After this there is about a mile of more or less level road in the same direction, then comes a mile of gentle ascent to the north-east, and then about a mile and a half of rather stiff ascent,—rather steep in the beginning but nowhere very steep—to the Dama La. The road always keeps on the right bank of the stream and curves round the first long ridge visible from the Gompa. Vegetation begins to decrease, specially at the fourth mile. The road is not particularly bad though it is stony with big and small boulders and stones. There was dense grass forming a thick carpet along streams lower down. After the third mile when the road turns to the right, it crosses a very small stream, coming from the



Dama La, 18,599 ft.

north-east and passing mostly under the stones. At the top of the pass there is a huge stone with flag poles on each side connected by strings with the flag poles on the stone. From the strings hang small pieces of cloth and wool as usual on passes in Tibet. From this stone onwards the road is level for 175 ft., to the edge of the pass. Immediately below this is the frozen Gauri Kund Lake. From the edge of the pass to the edge of the lake along the bends of the zigzag road the distance is 600 ft.; in a straight line, of course, it is much shorter. Thus the distance from the Didi-Gompa to the Dama La is not 1.3 km. as Sven Hedin says but 4.5 miles and the distance from the pass to the Gauri Kund Lake is not 4 km. (more than

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13,000 ft.) as he says but only 600 ft. from the edge of the pass or at most 775 ft. from the huge stone with the flag pole, and the rise is not 1 : 2.25 as stated by him but very much less, 1 : 12.5 or 1900 ft. in 4.5 miles. The observations on the top of the Dama La on Friday, the 23rd July, 1926, were as follows :—

Time	..	12.15 P.M.
Air temperature	..	17°.6 C.
Boiling point	..	81°.7 C.
Weather	..	Clear and calm.

The lake appears oblong from the pass, but seen from the other places it is rather oval—broad towards the west end and narrower towards the east end ; the sides not quite regular, but with a small bend here and there and a rather large projection near the eastern part of the south side. The lake runs along the ridge to its south, which extends north-west to south-east. The middle of the ridge is concave and is perfectly vertical with a hanging glacier on the top. In 1926, there was very little snow. The northern bank of the lake is formed by a big mass of large and small stones and the road runs along this. This side is also concave inwards. When this stony mass meets the southern ridge there it a depression at each end. It is impossible to reach the south side as snow and stones are constantly falling down. The lake is shallow on the northern side but deeper on the southern. There is also more snow on the south and only a thin layer on the north. In 1922, my bearer and another member of the party had a bath here after removing the snow layers at a height of about 18,500 ft. The length along the bank from N.W. corner to the S E. corner was 2,212 ft. The other side, of course, could not be measured, but appeared to be approximately of the same length. If the lake is taken to be roughly oblong then the length from the N.W. corner of the cliff to a big boulder under which people take shelter is 1,600 ft., and breadth from this place to the S.E. corner of the cliff 612 ft., but this, of course, is not an accurate estimate as the shape is oval, very broad on the western side and very narrow on the eastern side. The perimeter of the lake would thus be 4,424 ft., or about 4/5 of a mile. Beyond the lake the hills were crumbling on all sides, and the road was very stony for 2 miles, descending eastwards. After about 2 miles of descent, the valley opens into another coming from the north, and we followed the stream coming from this valley to the south. Going up the stream, the road leads to the Indus valley after crossing the watershed. The road runs along both sides of the stream but we kept to the right bank. A little further down there was a natural bridge of big boulders over the stream with the water flowing below them. There was a thick grassy carpet along the stream. The Kailas peak is just visible only from one place which is about

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a mile down the bend to the south. Afterwards this valley opens out into another running east and west and the road turns west down the united streams and the last Gompa is about a mile from this place. The road after the first descent of 2 miles is practically level throughout.

From Zuntu-Gompa to Darchin, it is about 6 miles by the direct road but we went northwards and crossed a ridge running north and south to the Kiangda-Gompa on the other side, which is about a mile above Darchin. At Darchin I found a fossiliferous stone full of small shells.

3. The Hot Springs at Tirthapuri.

From Darchin a road leads directly to Gyanima passing by Lalingta where there are some springs probably connected subterraneously with the Rakastal and which I had visited in 1922. In 1926, however, I travelled westwards to the unfrequented Dolchu monastery, which is about 20 miles from Darchin. Starting from Darchin I camped at a place 5 miles off called Kalyab after fording the stream coming from the Kailas past the Nyandi-Gompa about 2 miles from Darchin, and other streams later on. Owing to very little snow the year before and no rain up to that time the vegetation was extremely scanty. The road crossed many ridges alternating with dry channels, some coming from the Kailas range and others simply from local eminences. At Dolchu there is a very small spring but I was told that there is a very large one at a short distance which is the chief permanent visible source of the Sutlej. The observations at Dolchu on 28th July, 1926, were as follows :—

Time	8.30 A.M.
Air temperature	10°.0 C.
Boiling point	85°.1 C.
Weather	Calm and dull
Temperature of the spring water	2°.0 C.

From Dolchu to Tirthapuri is about 20 miles due north-west. The Sutlej is crossed at Dolchu to the left bank simply by jumping across. It flows through a narrow channel in a wide grassy bed. About 2 miles down it expands into a lake, about 4 furlongs, by 2 furlongs with a good deal of *Ranunculus aquatilis*, *Zannichellia palustris* and *Potamogeton pectinatis* in water and *R. cymbalariae* and *Polygonum* species on the margin. Just after this a stream joins the river from the north (right bank) by many branches over a stony bed. The bed becomes stony and a little later narrow. At 5 miles or so the road ascends slightly leaving the bank and passes over a broad stony dry plateau for 2½ miles or so. Then the bed again becomes grassy with a narrow channel and the road goes down to the bank. About a mile and half from here the river passes through a narrow gate or gorge form-

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ed by a much contorted yellowish rock on either side and meets another stream from a wide valley just before the gate. The road now passes to the right bank and the river has to be forded and the stream which is quite large is also forded. This stream is about 9 miles from Dolchu. The channel of the river and its bed are very narrow from here to Tirthapuri. The road goes high up on the right bank of the river and crosses a series of 3 terraces one after the other, the first smaller, the second larger, and the third larger still, and after a few furlongs descends again to cross another fairly large stream coming from the north. Then it ascends along a series of terraces and crosses a plain about 5 miles long to Tirthapuri, gradually descending again to the river bank. About 2 miles before the Gompa is reached there is a circular pit on the road with numerous mounds formed by piles of stones all round the margin as well as in the cavity. It is said to be the play-ground of the gods, and my Tibetans sat down inside this for a short time to meditate. Shortly before reaching the Gompa a dry channel is crossed and another immediately before reaching the Gompa. The Sutlej beyond Tirthapuri spreads out into a wide branched stream. There are hot-springs just beyond the Gompa above the right bank. The first one has the water gushing out through a main hole and 3 subsidiary holes. A little further there is another main hole with a few smaller holes. The temperature of the 2 main springs was suprisingly constant. The following were the observations as regards the temperature of the springs :—

7 P.M. 28th July, 1926	69°C.
7 A.M. 29th July, 1926	69°C.

Temperature reading after the bulb of the thermometer was pushed deep into the opening, 69°.5 C.[1]

The temperature of the subsidiary holes was as follows on the same days :—

In the evening	67°.8 to 68°.8 C.
In the morning	67°.0 to 68°.0 C.

The observations at Tirthapuri were as follows :—

Time : 29th July, 1926 ..	7.30 A.M.
Air temperature	9°.2 C.
Boiling point	85°.3 C.
Weather	Calm, clear.

There is a good deal of lime deposit round the place and calcification is going on round ropes, twigs, etc., which happen to be in the neighbourhood. There is also a great deal of lime deposit

[1] My large meteorological thermometer was broken while taking these observations.

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at some distance above showing that the springs were in those places formerly. There is a tradition that the water came out from a place higher up above the monastery and this part of the hill is held sacred and the pilgrims circumambulate it while the monastery is not included in the circuit. There is a reservoir near the springs where the temperature is only 42°C. and where a bath can be taken by the devout pilgrims. So far as I know no traveller has given the temperature of these springs. Sven Hedin passed through Tirthapuri but he does not say anything about the temperature of the springs.

In going to Gyanima from Tirthapuri the Sutlej has to be forded at the latter place.

4. The Three Passes.

The passes were crossed on the 6th August, 1926. On the 5th we had camped on the side of a stream which was too strong to be forded in the afternoon. Next morning we forded the stream. The observations taken at this camp were as follows :—

Time	..	6.30 P.M.
Air temperature	..	13°C.
Boiling point	..	84°C.
Weather	..	Clear.

From here to Dung across the passes is about 18 miles, and it is a long and rather trying stage. To the top of Kungri Bingri pass it is about 5 miles, then a very rough descent for a mile, then a gentle descent for a mile. after which there is an ascent of 3 miles to the top of Jayanti, when again a descent and ascent to the top of Unta, about 3 miles, from which Dung is about 5 miles descent. The figures for these passes as given by Sherring are :—

Kungri Bingri	..	18,300 ft.
Jayanti (Janti)	..	17,000 ft.
Unta Dhura	..	17,590 ft.

It was clear even without any hypsometric observations that the Jayanti pass is the highest and this conclusion was confirmed by the boiling point observations which are as follows:—

Pass.	Time.	Air temperature.	Boiling point.
Kungri Bingri ..	9.30 A.M.	7°.0 C.	82°.0 C.
Jayanti ..	1.00 P.M.	16°.5 C.	81°.8 C.
Unta Dhura ..	3.00 P.M.	12°.0 C.	82°.8 C.

The weather was calm and clear throughout the day.

It would appear, therefore, that Jayanti is higher than the Kungri Bingri by about 200 ft.

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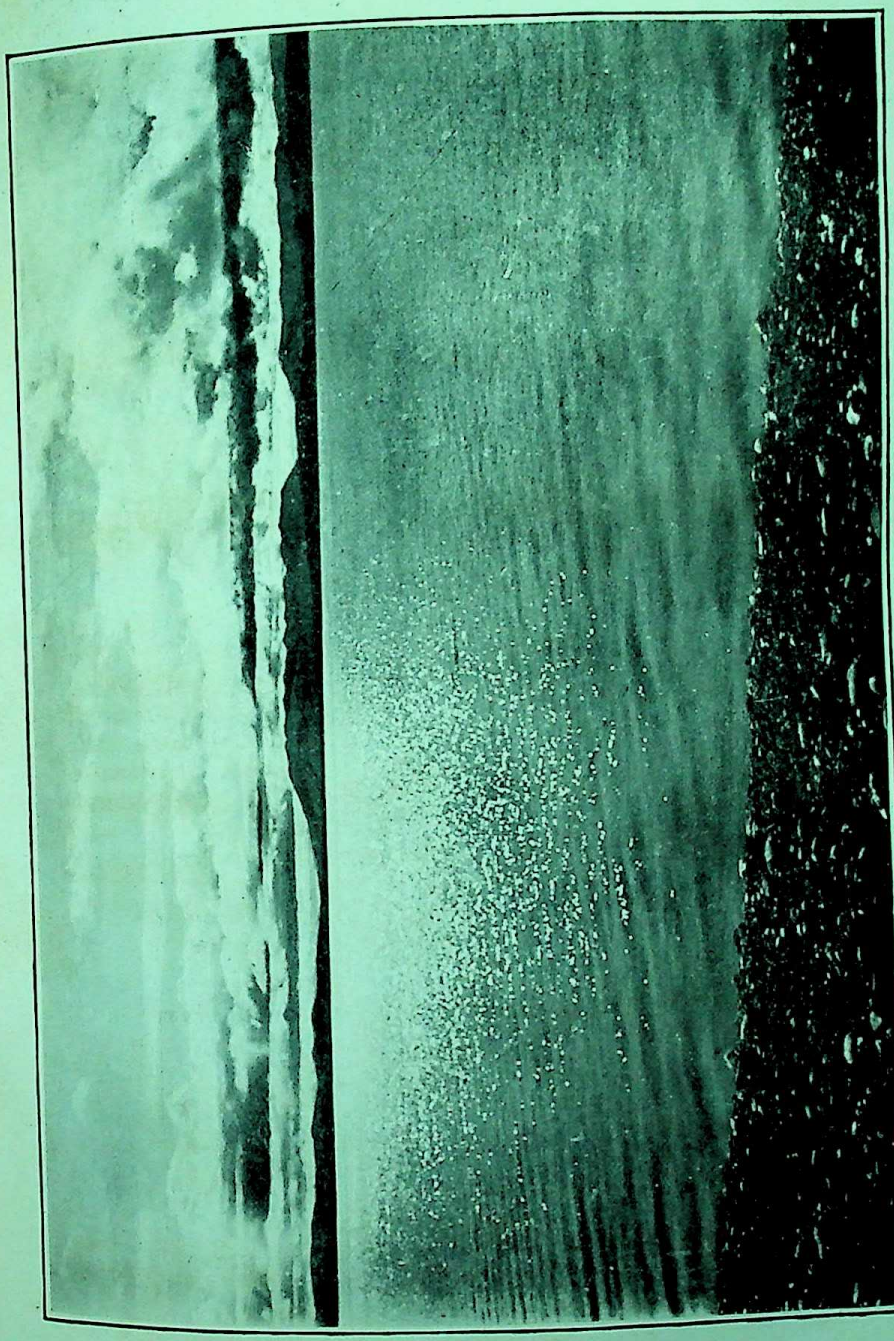

Manasarover lake from Gossul-Gompa, Mayum la in the distance.

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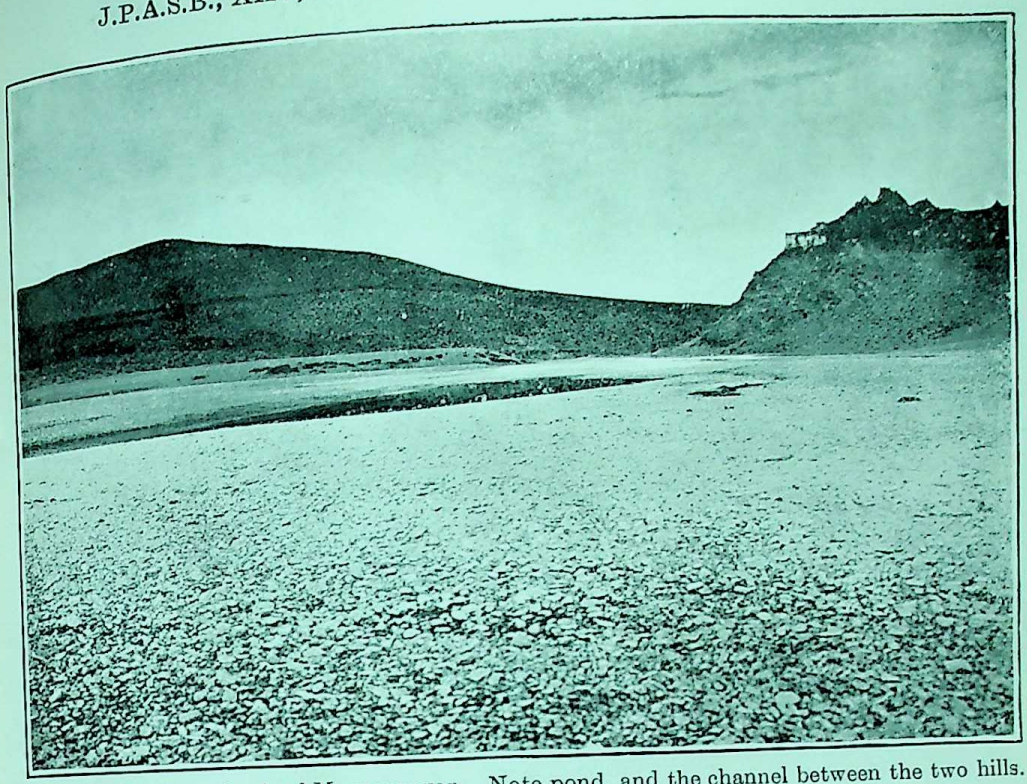

Fig. 1. Jiu-Gompa, Bank of Manasarovar. Note pond, and the channel between the two hills.

Fig. 2. The outlet of Manasarovar at the north-west corner.

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Fig. 1. The Kailas Range from the South near Rakastal, Kailas peak on the middle.

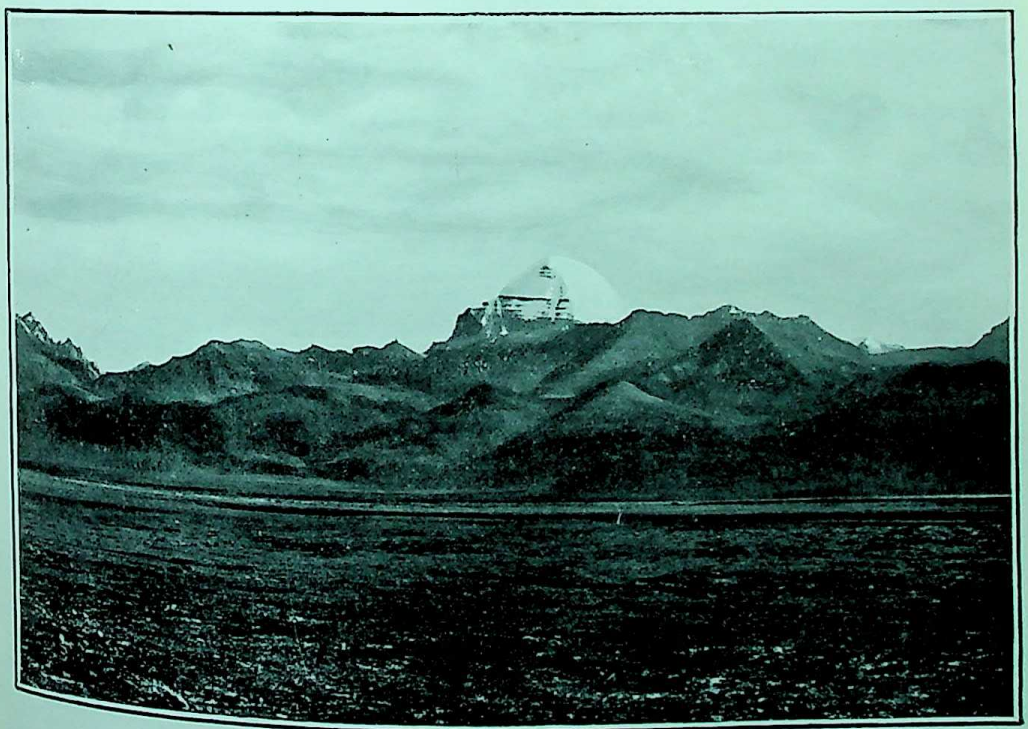

Fig. 2. The Kailas, 21,800 ft., from Barkha.

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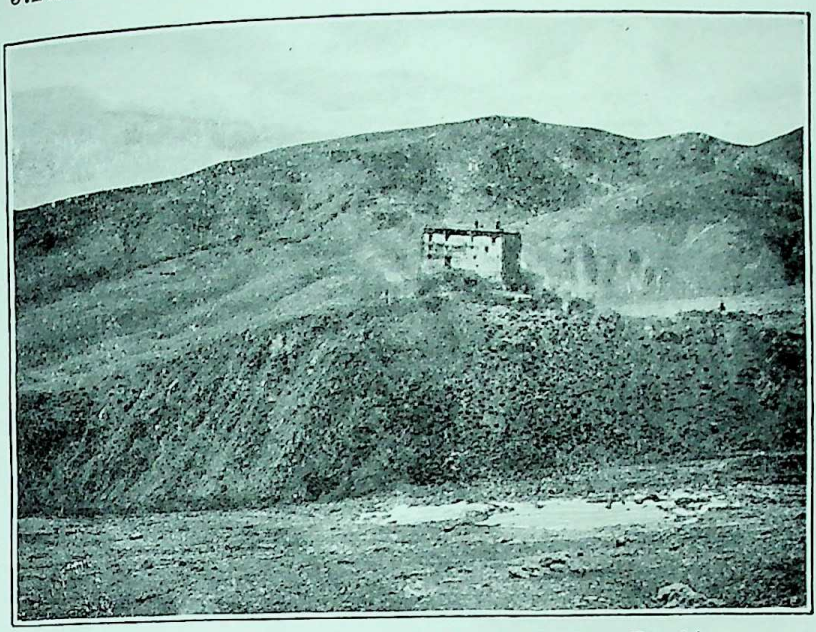

Fig. 1. First Monastery in Kailas round, above Darchin.

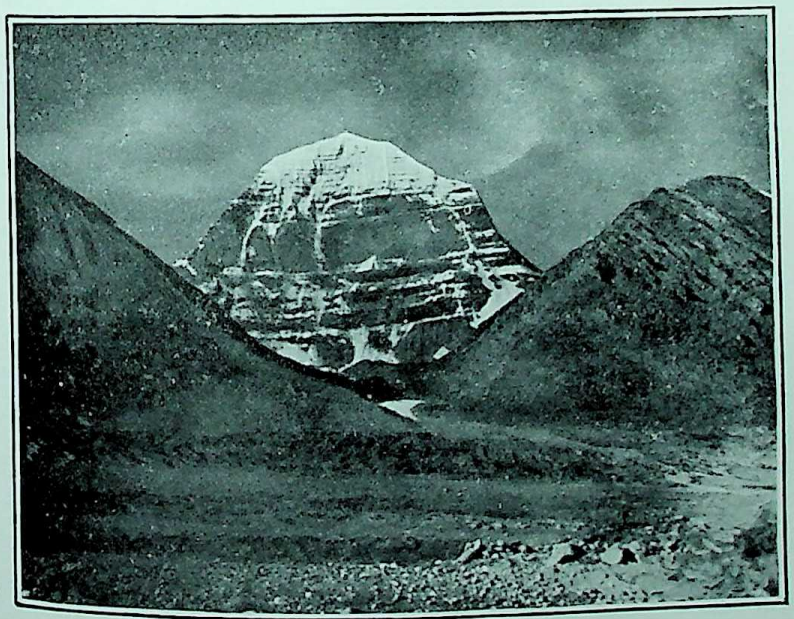

Fig. 2. Kailas from Didiphu-Gompa. North aspect.

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Fig. 1. Gauri Kund, 18,500 ft.

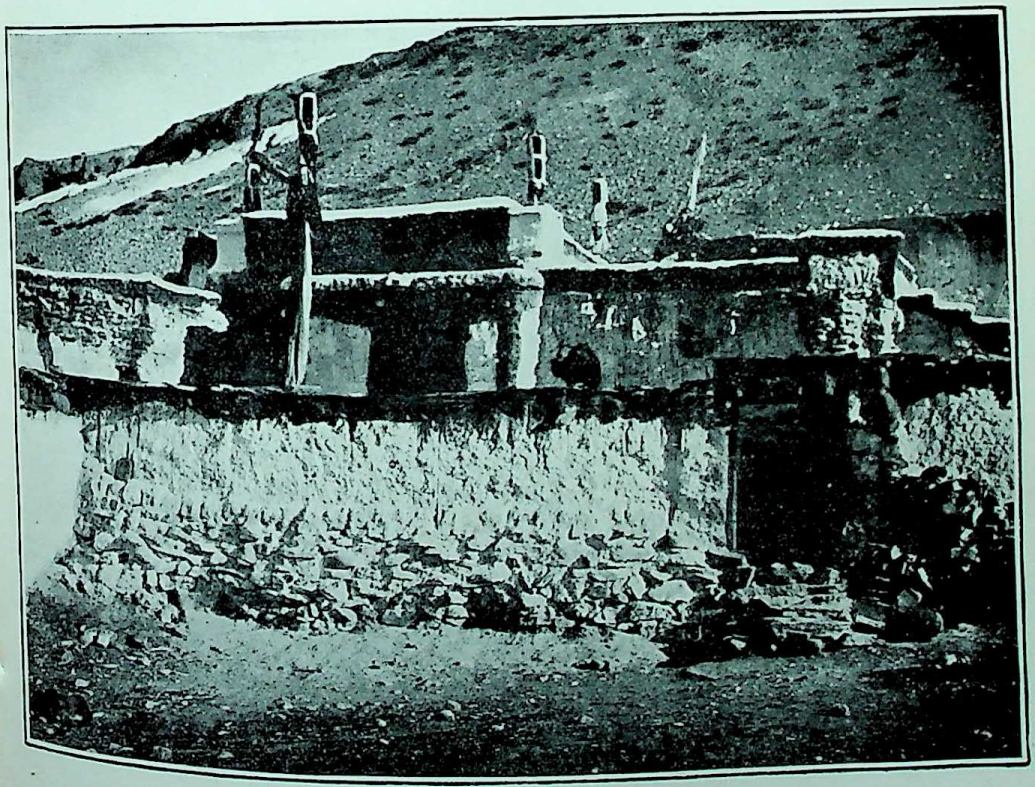

Fig. 2. Monastery at Tirthapuri.

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Fig. 1. Lama near a spring close to the source of the Sutlej, Dolchu-Gompa.

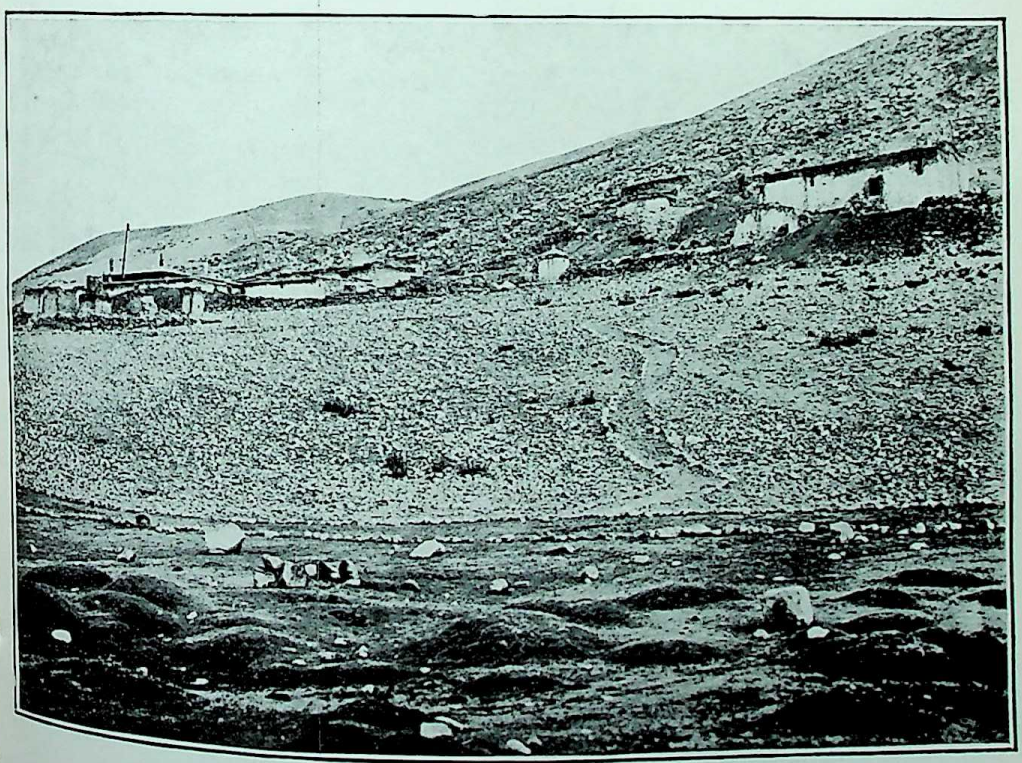

Fig. 2. Dolchu Monastery.

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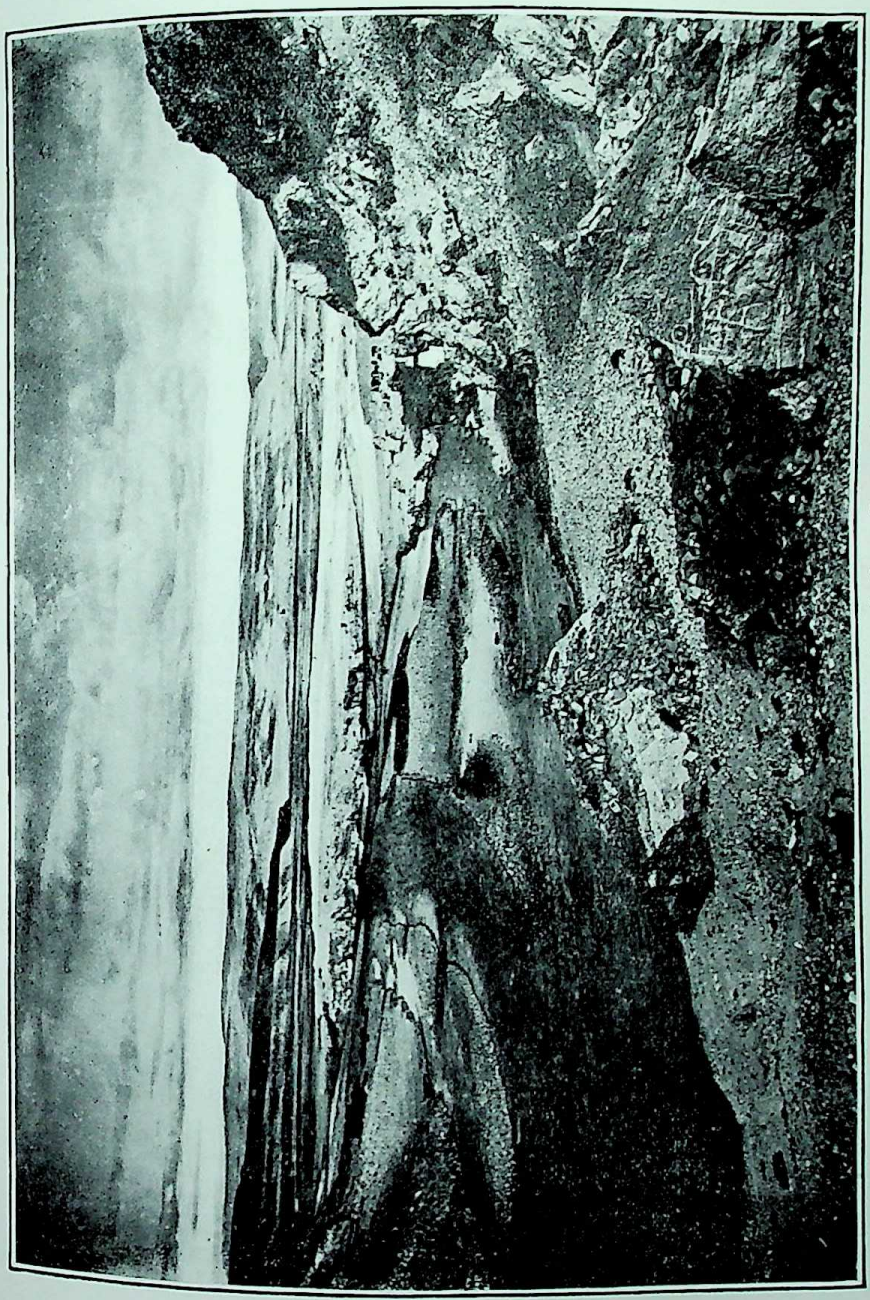

The Sutlej at Tirthapuri. Note inscription: *Om mani padme hum.*

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Hot spring at Tirthapuri.

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Lime deposits at Tirthapuri. Note the inscription: *Om mani padme hum.*

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Meteorological Normals of Calcutta.

By V. V. SOHONI.

CONTENTS.

		Page
Historical introduction	.. ..	237
Reference to previously published Calcutta data	.. ..	239
Blanford's description of the climate of Calcutta	.. ..	240
Notes on Tables of Normals	.. ..	242
Some abnormal records of Calcutta	.. .. ..	250
Tables of Normals :—		
I.	Pressure	251
II.	Surface air temperature	252
III.	Maximum, minimum, wet minimum and grass minimum temperatures	253
IV.	Ground temperature	253
V.	Wet Bulb temperature	254
VI.	Relative Humidity	255
VII.	Absolute Humidity	256
VIII.	Rainfall	257
IX–XI.	Relative frequency of clouds, 8, 10, and 16 hrs.	258
XII.	Cloud amount	261
XIII.	Hours of bright sunshine	261
XIV.	Wind velocity	262
XV.	Wind direction	263
XVI–XXVII.	Percentage frequency of wind direction ..	264
XXVIII–XXXI.	Upper air winds	276
Text Figures :—		
1.	Picture of Alipore Observatory	238
2.	Pressure	280
3.	Temperature and Relative Humidity	281
4.	Absolute Humidity	282
5.	Wind Velocity and Rainfall	283
Plate :—		
	Typical pressure-tube anemograms.	

HISTORICAL INTRODUCTION.

Seasonal weather with its variations has always been an important factor in India. From the earliest times of British interest in this country more or less desultory observations were taken at the instance of various officers scattered in different parts of the country. Observations before 1865 have mostly been found to be of little value.

In Calcutta, at the Survey Office in Park Street, systematic observations commenced in 1853. Interest in the meteorology of India in general, and of Bengal in particular, received an impetus after the great cyclone that visited Calcutta in October 1864. It was accompanied by a storm wave up the Hughly.

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Over 80,000 human beings were drowned or died of exposure and a great part of the shipping on the river was wrecked. As a result of the awakening of interest in weather phenomena, five provincial systems of observations were evolved during the period 1865–1874. The one for Bengal came into being in 1867, under the Reportership of Mr. H. F. Blanford, who was then Professor of Science in the Presidency College and one of the honorary secretaries of the Asiatic Society of Bengal.

About 1874, on the recommendation of the English Meteorological Council a reorganisation of the observational

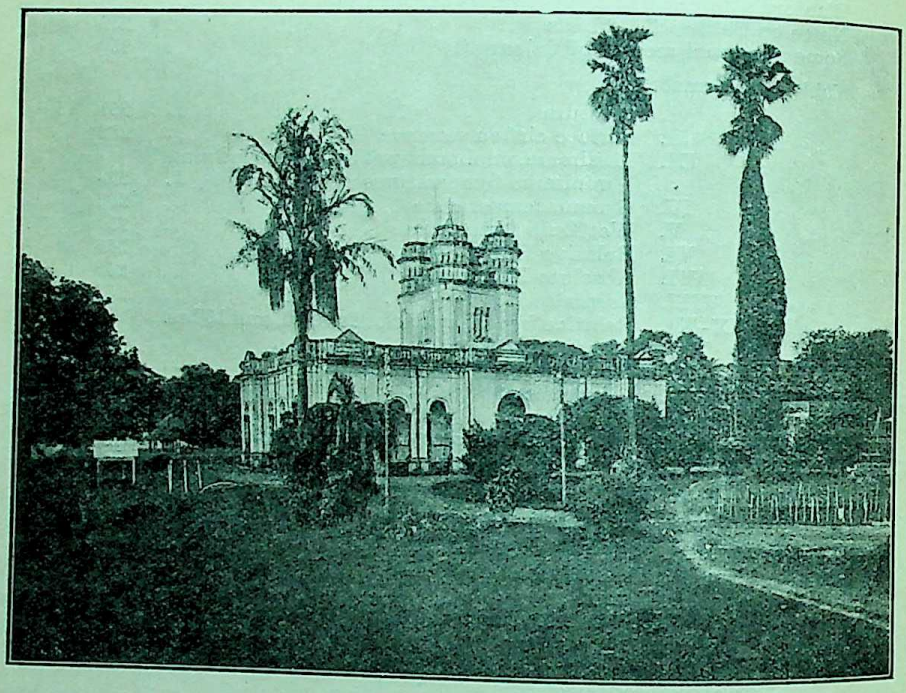

Fig. 1. Alipore Observatory.

work in India was contemplated by Government, and Mr. Blanford was appointed the Imperial Reporter. He drew up a scheme for an all-India service, which was launched in 1875. The Alipore Observatory was started as one of the initial items of this scheme. The objects of the observatory were manifold. Some of them were:—recording of observations of various meteorological elements, maintaining autographic instruments also for this purpose; providing for a central depot for verification of instruments for other observatories, and for a training ground for observers. Experimental observations and special investigations were also part of the observatory's programme

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of pioneer work, which commenced in 1877. After the establishment of this institution, observations at the Survey Office were stopped. The normals given in the tables at the end, are based on the records of various self-recording instruments and eye observations extended over a series of some 20 years, at the Alipore Observatory (Fig. 1). Latitude 22° 32′N. Longitude 88° 24′E.

Reference to previously published Calcutta data.

Apart from the mass of observational data for Calcutta, published in the Asiatic Society's Journal, the Meteorological Department's reports and Father Francotte's publication of observations at St. Xavier's College, there are a few memoirs of the India Meteorological Department in which observations of some elements or other have been discussed. They are:—

Indian Meteorological Memoirs.

Vol. I, Pt. I.—On the winds of Calcutta, by H. F. Blanford. This contains an analysis of 10 years' (August 1856–July 1866) hourly observations of the wind vane and four years' anemograms (July 1871–June 1875).

Vol. II, Pt. V.—On observations of temperature and humidity at a height of 4 feet and 40 feet above the ground at Alipore Observatory, by S. A. Hill. April 1878 to March 1882.

Vol. IV, Pt. I.—On the diurnal variation of the rainfall at Calcutta, by H. F. Blanford. Seven years' data (January 1878–December 1884) from a hyetograph have been considered.

Vol. IX, Pt. VIII.—Discussion of hourly observations of temperature, air pressure, and aqueous vapour pressure as recorded by the autographic instruments in use at the Alipore Observatory, Calcutta, during the period 1881 to 1893, by E. Douglas Archibald. Harmonic analysis has been largely used in the discussion.

Vol. XVIII, Pt. II.—A discussion of the anemographic observations recorded at Alipore from March 1877 to February 1904, by Sir John Eliot.

None of these, however, deal with the "normals" alone, and generally the periods of data used are comparatively short. The data for the tables at the end of this compilation, on the other hand, are for some 20 years; and further in cases of most elements, more or less synchronous. This is an attempt to collect together "normals" of all available elements, for purposes of reference.

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Blanford's description of the climate of Calcutta.

For a pen picture of the normal march of the seasons in Calcutta it is best to quote Blanford[1]:—

"At Calcutta, the cool weather scarcely sets in before the second week of November, and lasts only to the middle or latter part of February. For ten or twelve weeks the weather is delightful, pleasantly cool in the daytime, and in the evening sufficiently cold to make a fire agreeable, though perhaps hardly indispensable to comfort. But the dampness of the climate manifests itself at night in frequent fogs on the river and the low grounds around; and in the native part of the town and the crowded suburbs, the smoke from the huts condenses the moisture of the air and enshrouds the habitations in a veil of fog that remains suspended in the still atmosphere. About the end of February the days begin to be appreciably warmer, the sun's power greater and his glare more intense, and in March it is sufficiently warm in the house to require that the punkah be set in movement once more after its three months' holiday. But the nights, or at least the hours after midnight, are still comparatively cool, and as the air is as yet not highly charged with moisture, to an acclimatised European the heat is by no means oppressive. During this month and April the rise of temperature is very rapid, and by the end of the latter month the afternoon readings of the thermometer are often as high as any recorded during the year.

"In December any rain is exceptional. In January and February it occurs less regularly and frequently than in Upper India, but there are generally two or three rainy days in these months, preceded by some days of close cloudy weather with light southerly winds; and when the weather clears a great fall of temperature follows and a renewal of the cold season. In March and April rain becomes more frequent, but in the shape of the thunder squalls known as nor'-westers which, as a rule, come on towards the evening, and are often preceded by a dust-storm. Their general character has been described in a previous part of this work. For a graphic but perhaps somewhat exaggerated account of one of these little storms the reader may be referred to M. Rousselet's well-known work on India, where, however, the writer appears to be under the mistaken impression that he had experienced a cyclone. These squalls are more frequent in May, and sometimes usher in a day or two of continuous rain; but, more frequently, an hour or two expends their force and they are followed by a refreshing night and a somewhat cooler day. Now and then, at intervals of some years, a cyclone may pass

[1] Blanford—A Practical Guide to the Climates and Weather of India, Ceylon and Burmah and the Storms of Indian Seas: 1889, pp. 152–154.

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over Bengal in May or the early part of June but these more formidable visitors are perhaps rather to be expected at the end than at the beginning of the monsoon, and happily, at any season, are to be reckoned as meteorological rarities in Bengal.

"An advantage which Calcutta enjoys in the hot season, and which is denied to places much further inland, is the southerly breeze which, at the close of a hot day, often blows up from the wide estuary of the Hughly, bringing some hours of agreeable relief. It does not last beyond midnight, but it mitigates the heat of the dinner hour, and renders the southern verandahs of the large Chowringhee houses pleasant places for the post-prandial lounge.

"At length, in the early part of June, the clouds gather, more thickly, while the barometer falls to a lower point than it has reached since the beginning of the year; and in the first or second week, heavy and continuous rain ushers in the monsoon. This first burst of the rains usually accompanies a cyclonic storm formed either at the head of the bay or over the delta itself. As has been explained in a previous part of this work, such storms are not attended with very strong winds, at least on land, though the weather may be stormy at sea; and the barometric depression at their centre does not exceed two or three-tenths of an inch. The first onset generally carries the rains to the greater part of Bengal, and sometimes, but not always, to Behar. As a rule, the rainfall does not penetrate to the Upper Provinces till some days or even weeks later. Its immediate effect is a great fall of the day temperature; and the comparative coolness, supervening on many weeks of close oppressive weather, brings a sense of relief. Bursts of rain of a similar character alternating with sporadic showers and an occasional rainless interval rarely lasting more than a day or two, follows in succession through July and August. The air is saturated with vapour; vegetation grows apace, and indoors and out of doors every absorbent material reeks with moisture: but so long as the rainfall is abundant, and the intervals of its suspension short, the climate, if not exactly pleasant, is not very oppressive nor notably unhealthy. When, however, in September, the rainless intervals become longer, and the day temperature begins to rise, while the air, still highly charged with moisture, is almost motionless, the relaxed energy of the human system fairly rebels against this further trial of its endurance, and all who are not compelled by their avocations to remain at their post hasten to escape to the temporary refuge of a hill station. September and October are thus the most trying and unhealthy season of the year; and in Bengal it is not until the end of October or the early part of November that an appreciable fall of temperature brings relief.

"Such, according to the author's experience of many years, is the climate of Calcutta, and the description may serve as

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fairly representative of that of the greater part of Bengal. Farther north indeed, and on the higher ground to the west of the delta, the hot season is somewhat drier and its temperature rather higher; and in Eastern Bengal the differences are of the opposite character."

Notes on Tables of Normals.

In the case of observations like pressure, temperature and wind direction, the hour mentioned is the instant of observation; while in the case of elements like rainfall, wind movement, sunshine, the hour indicated represents the 60 minutes ending with that hour; *e.g.*, period 10 hrs. to 11 hrs. is given as 11 under "hour". Local mean time is always implied; pressures are in inches of mercury, temperatures in Fahrenheit degrees; surface wind velocity in miles per hour, and upper air winds in metres per second.

Air Pressure. Table I gives the hourly normals of air pressure. Also see Fig. 2. These are based on tabulations of the records, for the period 1898–1917, of the Kew Barograph. A light from a lamp passing through a condenser and a slit cuts across the top of the mercury column of a barometer and is focussed on a drum carrying photographic paper. The drum rotates once in two days and when the paper is developed the line of demarcation between the light and dark areas of the photograms represents the variation of the barometric height. The values given (in inches of mercury) are corrected to 32° F. and have been also corrected so as to be comparable with the Alipore standard barometer, *i.e.*, corrected for "index error". The correction of the Alipore standard barometer to Kew Standard is supposed to be + .005″. The values are not corrected for sea-level, nor for gravity. The height of the cistern of the instrument above sea-level is 20 feet.

Temperature. Table II gives the hourly normals of surface air temperature worked out from tabulations of the records of the Kew Thermograph for the period 1901–20. Also see Fig. 3. The thermograph photographically registers the dry and wet bulb temperature. At the north end of the observatory is a louvred pent-house in which the thermometers are kept, the bulbs being about 5 ft. above ground. Their bent stems are led into the observatory through a wooden wall. Near the top of the threads of the thermometers, there are small breaks in the column. Reflected light from lamps passes through these tiny gaps near the tops of the threads into a dark box, where it is focussed on to a drum covered with sensitive paper and driven by clockwork. Continuous records of temperature are thus obtained, there being suitable

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provision of an occulting device for causing small gaps in the photographic records in order to identify hours.

It is worth while comparing the exposure of thermometers of this thermograph with that obtained in the meteorological thatched shed a few yards away, where thermometers are kept from which eye observations are taken for weather report and climatological purposes. Until a few years ago all the meteorological observatories in India housed their thermometers in similar open-sided thatched sheds, which have mostly been replaced by Stevenson Screens in recent years. In the shed the thermometers are about $4\frac{1}{2}$ ft. above ground. A whole year's comparison (1921) between the records of Kew Thermograph and those of the shed readings of 10 hrs. and 16 hrs. gave the following mean differences.

	Dry Bulb difference in °F.		
	10 hrs.	16 hrs.	Mean
Shed minus Kew thermograph	+ 1.7	+ 0.8	+ 1.3

Further comparisons were made in 1927-28 for 4 selected months August, November, February and May, and simultaneous ventilated Assmann Psychrometer observations were also taken in the shed and the pent-house, where the usual observations are from unventilated bulbs.

The following tables summarise the results :—

		Dry bulb difference °F.			
		8 h.	10 h.	16 h.	Mean
(a) Shed (unventilated) minus Kew thermograph (unventilated).	August	+ 0.1	+ 0.5	− 0.7	0.0
	November	+ 0.2	+ 3.9	+ 2.1	+ 2.1
	February	+ 0.3	+ 3.8	+ 3.0	+ 2.7
	May	− 0.2	+ 0.6	+ 0.2	+ 0.2
	Mean of 4 months	+ 0.1	+ 2.2	+ 1.1	+ 1.1

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		Dry bulb difference °F.			
		8 h.	10 h.	16 h.	Mean
(*b*) Shed (ventilated, *i.e.*, Assmann) minus Shed (unventilated).	August	− 0.8	− 0.4	− 0.1	− 0.4
	November	− 1.7	+ 0.3	+ 0.3	− 0.4
	February	− 1.7	− 0.2	+ 0.7	− 0.4
	May	− 0.6	+ 0.1	+ 0.5	0.0
	Mean of 4 months	− 1.2	− 0.1	+ 0.3	− 0.3

These results roughly indicate—

(*a*) that in the non-rainy, cold and non-cloudy months the louvred pent-house situated as it is adjoining the observatory building and in the proximity of a number of trees exerts a shielding influence, the thermometers in it registering from about 2° to 4° less than those in the open shed, during the hotter portion of the day. The effect presumably is much less marked in the hot weather and the monsoon.

(*b*) that during the cooler and less breezy portion of the day and night (as represented by 8 hrs.) the unventilated readings in the shed are generally higher by a degree or more (about 2° in the winter months), than the ventilated readings. During the hotter portion of the day (with which also is associated greater breeziness) this effect for all practical purposes vanishes.

Table III contains the monthly normals of maximum temperature, minimum temperature, the wet minimum temperature and the grass minimum temperature. The first two are based on 33 years' data and have been already published in the book of normals (Indian Meteorological Memoirs, Vol. XXII, Pt. 3). The normals of wet minimum and the grass minimum were worked out from data for 1901-1920. The grass minimum thermometer which is supposed to register the minimum attained by nocturnal radiation has always been exposed on a felt pad fixed on a thin wooden block on the ground, supposed to provide an exposure of non-varying character and simulating a grass lawn in effect.

Ground Temperature. Table IV contains normals of ground temperature based on observations from 1890 to 1904. Observation times were for all these years fixed at $5\frac{3}{4}$ hrs., $13\frac{3}{4}$ hrs. and $21\frac{3}{4}$ hrs. Four thermometers used to be read. One was kept flat with the bulb touching the sur-

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face of bare ground and the others were buried with bulbs at depths of 1 ft., 3 ft. and 6 ft., in the soil. One feels some doubt about the satisfactoriness or the constancy of the exposure of the surface thermometer. Probably the normals at best indicate only very broadly, the variations of the temperature of the surface of the soil, from month to month.

While dealing with temperatures, it may not be out of place to mention the Solar Radiation Thermometer (Black bulb *in vacuo*), at Calcutta. Blanford, in his book referred to on page 4, gives the following values based on observations in 1885, which show roughly the order of sun thermometer readings to be expected.

	Temperature in the sun °F.	Excess over shade maximum.
January ..	137	55
February ..	145	64
March ..	155	63
April ..	159	62
May	165	66
June	162	71
July	160	71
August ..	155	67
September ..	155	66
October ..	155	67
November ..	146	62
December ..	140	65

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Humidity. Table V contains hourly normals of the wet bulb temperature. These are based on the data (1901–1920) from records of the wet bulb of the Kew thermograph described on page 242. The wet bulb is alongside the dry bulb and registration is on the same sensitive paper. The wet bulb is non-ventilated. A comparison between the Kew thermograph, shed thermometers and the Assmann Psychrometer observations, similar to that made for the dry bulb thermometers and described on page 243 gives the following results :—

A year's comparison.

(1921.)

	Wet Bulb difference in ° F.		
	10 h.	16 h.	Mean
Shed minus Kew thermograph ..	+1·1	+0·3	+0·7

(1927–1928.)

		Wet Bulb difference ° F.			
		8 h.	10 h.	16 h.	Mean
(*a*) Shed (unventilated) minus Kew thermograph. (Unventilated)	August ..	−1·0	−0·8	−1·6	−1·1
	November	−0·6	+0·8	+0·1	+0·1
	February	−0·5	+1·4	+0·8	+0·6
	May ..	+0·1	0·0	−0·2	−0·1
	Mean of 4 months.	−0·5	+0·3	−0·2	−0·1

		Wet bulb difference ° F.			
		8 h.	10 h.	16 h.	Mean.
(*b*) Shed (ventilated *i.e.*, Assmann) minus Shed (unventilated)	August ..	−0·4	−0·3	−0·3	−0·3
	November	−0·4	+0·5	+1·1	+0·4
	February	−0·4	+0·6	+1·0	+0·4
	May ..	−0·4	0·0	+0·3	0·0
	Mean of 4 months.	−0·4	+0·2	+0·5	+0·1

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(*a*) The differences between shed and pent-house range from 0 to about 1°. In the hot weather they seem to be negligible and in the monsoon of the order of 1° the shed value being lower. In the cold weather apparently the shed wet bulb is lower in the cooler portion of the day and higher in the warmer.

(*b*) At 8 hrs. the difference between ventilated and unventilated wet bulb seems to be always 0·4°, the ventilated value being lower. In the hot part of the day this does not seem to hold good except probably in the monsoon.

Table VI shows the hourly values of relative humidity (percentage of saturation) and Table VII the corresponding values of vapour tension in inches of mercury at 32° F. Also see Figs. 3 and 4.

Rainfall. Table VIII contains the normals of monthly rainfall in inches according to different hours of the day, based on the records, for 1905–1924, of the Beckley's autographic tilting bucket raingauge. Also see Fig. 5. This raingauge was located in a small room, within a few yards of the enclosure containing the other raingauges of the observatory. The funnel receiving the rain was in the roof of the room, 8 ft. above the ground. Ordinary raingauges have their funnel rims just a foot above the ground.

Scattered through the period 1911–1924 there were small gaps of a few months duration when the Beckley raingauge was not working. The tabulations of the Beckley records were therefore supplemented by the records of the Hellmann's self-recording syphon raingauge. The total period of such supplements is 14 months, *i.e.*, only about 6 % of the whole period of 20 years.

In this connection it is interesting to compare the monthly normals derived from Beckley raingauge with those of the ordinary raingauge. The following table summarises this information.

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MONTHLY RAINFALL.

	Beckley 20 years 1905–1924.	Ordinary 20 years 1905–1924.	Ordinary 43 years[1] ending 1920.	Number of rainy days.[2]
January ..	0·36	0·44	0·34	0·7
February ..	1·28	1·22	1·10	1·6
March ..	1·57	1·63	1·44	2·4
April	1·93	2·11	1·89	3·2
May	5·02	4·93	5·75	7·3
June	12·87	13·35	11·90	13·3
July	13·97	12·74	12·51	17·8
August ..	13·64	13·80	12·69	18·3
September ..	9·10	9·00	9·87	13·2
October ..	4·73	4·30	4·19	6·0
November ..	0·46	0·67	0·66	1·0
December ..	0·13	0·16	0·20	0·4
Year	65·06	64·35	62·54	85·2

It may not be out of place also to record here the frequency of heavy rain at Alipore.

FREQUENCY OF HEAVY RAIN.

Alipore.

Rainfall in 24 hours ending 8 hrs.	Number of occasions during 30 years 1891–1920.
3″ to 4″	32
4″ to 5″	15
5″ to 6″	9
6″ to 7″	4
7″ to 8″	2
8″ to 9″	3
9″ to 10″	..
10″ to 11″	1
11″ to 12″	1
12″ to 13″	..
13″ to 14″	..
14″ to 15″	1

Cloud. Tables IX to XI give the relative frequency of different kinds of clouds in different months for three observation times, 8 hrs., 10 hrs., and 16 hrs. Records of the period 1901–1920 were consulted in preparing these tables and the figures given represent the mean number of days in a given month on which a particular kind of cloud prevails at the specified hour. There are, of course, a number of occasions when several kinds of cloud co-exist and this results in the total

[1] Published in Indian Meteorological Memoirs, Vol. XXIII, Pt. 7.
[2] A rainy day is a day on which 0·1″ or more of rain is recorded.

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of cloud-unit occasions in a month exceeding the number of days in the month.

Table XII shows the amount of cloudiness at 8, 10 and 16 hrs. in different months, on the basis of whole sky being taken as 10.

Sunshine. Table XIII indicates the average hours of bright sunshine in different months. They are based on sunshine records of a Whipple-Casella Sunshine-Recorder for the period 1889 to 1908.

Wind. The autographic records of the standard instrument, a Robinson-Beckley anemograph have been used in finding out the hourly normals of wind direction and velocity. The rotating cups of the instrument are on one of the towers of the Observatory, at a height of about 60 ft. The cups are geared on to a cylinder with a projecting metal helix which by contact pressure on "metallic" paper mounted on a rotating drum records the run of the wind. The wind direction is also recorded by means of vanes which rotate with change in wind direction and are geared on to a recorder similar to that registering the run of the wind. The records for the period 1901–1920 were used. Table XIV contains values of the normal hourly wind velocity. Also see Fig. 5. Table XV gives the hourly mean monthly direction of wind. Tables XVI to XXVII show the hourly percentage frequency of wind direction reduced to 8 points of the compass, month by month.

The records of a Robinson-Beckley instrument are not useful for the study of wind structure; but in Plate 16 are reproduced three pressure-tube anemograms of days, more or less randomly selected, but typical of different seasons. In the same plate is included an anemogram during the passage of a monsoon cyclonic storm, fairly close to Calcutta.

Upper Air Winds. Tables XXVIII to XXXI contain the normals of upper winds. The observations on which these normals are based cover the period 1915–25. Until July 1923 the pilot balloon station was at Alipore (Calcutta), but it was found that the visibility in Calcutta is not satisfactory and is usually positively bad in the winter months. The main cause of this is apparently the smoke from the city and from the mills to the north of Calcutta. The prevailing northerly winds of the winter bring this smoke from the mill area south to the vicinity of Calcutta. Most probably, there is also a persistent temperature inversion in this region, during these months, at least in the lower layers of the free air, which helps to maintain the atmospheric turbidity. The upper air station was therefore shifted to Diamond Harbour some 40 miles down the river Hughly to the south, where the flights proved more successful. The normals were computed at the Aerological Observatory of Agra.

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Some abnormal Records of Calcutta.

In conclusion, although this paper deals with meteorological normals, it may be worth mentioning some of the most abnormal records of Alipore.

"Record" values.

Maximum temperature ..	111·3° on 31st May, 1924.
Minimum temperature ..	44·4° on 20th January, 1899.
Grass Minimum temperature ..	32·3° on 7th February, 1883.
Wind velocity in gusts exceeding 60 m. p. h.	28th April, 1914 } both during 24th May, 1926 } nor'-westers. 61 to 65 m.p.h.
During 1878–1927 { Highest annual rainfall { Lowest ,, ,,	89·32″ in 1900. 39·38″ ,, 1895.
Examples of extremely *intense* fall of rain.	3·50″ in 1 hour, 1-30 A.M. to 2-30 A.M. on 22nd July 1926 during a thunderstorm. Total rain in the storm 5·26″ in 3 hours, 10 minutes, out of which 4·20″ fell in 1¼ hours. 3·25″ in 40 minutes during an afternoon thunderstorm on 6th May 1928, *i.e.*, at the rate of 4·88″ an hour.
[1] Daily falls of rain exceeding 10″ during period 1891–1927 (8 A.M. to 8 A.M. records).	14·53″ on 20th September, 1900. 11·95″ ,, 18th June, 1908.
Falls exceeding 10″ in 24 hours (1912–1927).	12·75″ between 8 P.M. 5th August, 1920 and 8 P.M. 6th August. 10·49″ between 10 P.M. of 24th September, 1922 and 10 P.M. 25th.

[1] *Ind. Met. Mem.*, Vol. XXI, Pt. 3 pp. 33, 35.

The Observatory,
Alipore, Calcutta.
The 7th January, 1929.

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TABLE I.

NORMALS OF PRESSURE.

(1898–1917.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
0	30·038	29·970	29·874	29·765	29·683	29·562	29·554	29·606	29·712	29·849	29·965	30·029	29·800
1	30·031	29·963	29·857	29·752	29·668	29·546	29·539	29·591	29·701	29·839	29·957	30·022	29·789
2	30·022	29·952	29·847	29·739	29·656	29·536	29·527	29·578	29·687	29·830	29·947	30·013	29·778
3	30·012	29·941	29·839	29·729	29·650	29·529	29·514	29·568	29·678	29·825	29·942	30·005	29·769
4	30·009	29·937	29·836	29·730	29·653	29·529	29·514	29·565	29·676	29·824	29·940	30·004	29·768
5	30·015	29·943	29·846	29·744	29·663	29·535	29·519	29·570	29·683	29·834	29·948	30·011	29·776
6	30·029	29·960	29·865	29·760	29·680	29·548	29·530	29·580	29·694	29·851	29·966	30·025	29·791
7	30·050	29·983	29·890	29·785	29·700	29·565	29·546	29·600	29·714	29·873	29·989	30·049	29·812
8	30·075	30·006	29·912	29·805	29·714	29·575	29·556	29·612	29·732	29·890	30·010	30·071	29·830
9	30·100	30·028	29·930	29·819	29·727	29·582	29·567	29·624	29·744	29·902	30·025	30·093	29·845
10	30·104	30·039	29·934	29·820	29·734	29·584	29·568	29·625	29·746	29·902	30·023	30·092	29·848
11	30·088	30·022	29·925	29·810	29·719	29·577	29·563	29·618	29·737	29·887	30·005	30·075	29·836
12	30·057	29·998	29·900	29·790	29·697	29·563	29·551	29·604	29·718	29·862	29·975	30·044	29·813
13	30·020	29·963	29·868	29·760	29·672	29·544	29·532	29·584	29·692	29·833	29·941	30·007	29·785
14	29·994	29·934	29·837	29·731	29·648	29·525	29·512	29·561	29·666	29·808	29·919	29·984	29·760
15	29·978	29·914	29·811	29·707	29·622	29·504	29·492	29·542	29·646	29·794	29·907	29·970	29·740
16	29·975	29·908	29·800	29·693	29·602	29·487	29·479	29·531	29·639	29·791	29·906	29·958	29·732
17	29·981	29·912	29·799	29·678	29·599	29·487	29·476	29·529	29·641	29·796	29·915	29·976	29·732
18	29·989	29·917	29·808	29·694	29·613	29·497	29·486	29·538	29·652	29·806	29·927	29·989	29·743
19	30·009	29·934	29·825	29·716	29·638	29·520	29·508	29·554	29·674	29·828	29·950	30·009	29·764
20	30·022	29·954	29·848	29·742	29·663	29·541	29·528	29·581	29·696	29·843	29·965	30·023	29·784
21	30·040	29·971	29·872	29·764	29·683	29·559	29·549	29·606	29·719	29·862	29·977	30·038	29·803
22	30·044	29·977	29·877	29·775	29·694	29·572	29·562	29·617	29·726	29·865	29·980	30·042	29·811
23	30·040	29·977	29·875	29·774	29·692	29·572	29·563	29·617	29·724	29·861	29·977	30·039	29·802
Mean	30·030	29·963	29·861	29·753	29·670	29·543	29·531	29·583	29·696	29·844	29·961	30·024	29·788

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TABLE II

NORMALS OF SURFACE AIR TEMPERATURE.

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
0	60·4	64·8	73·8	79·5	81·2	82·0	81·4	81·5	80·5	77·0	68·3	59·9	74·3
1	59·7	64·4	73·2	79·0	80·8	81·6	81·3	81·0	80·3	76·7	67·8	59·3	73·8
2	59·3	63·7	72·7	78·6	80·5	81·4	81·1	80·8	80·1	76·5	67·5	59·4	73·4
3	58·9	63·3	72·2	78·2	80·2	81·2	80·9	80·6	79·9	76·2	67·1	58·5	73·1
4	58·6	62·9	71·8	77·8	79·9	80·9	80·7	80·3	79·6	76·1	66·8	58·3	72·8
5	58·2	62·4	71·3	77·5	79·7	80·8	80·6	80·3	79·6	75·8	66·4	57·8	72·5
6	57·9	62·2	71·0	77·4	80·0	81·0	80·7	80·2	79·5	75·7	66·2	57·5	72·4
7	57·6	62·0	71·5	78·7	81·6	82·2	81·6	81·1	80·8	76·6	66·9	57·4	73·8
8	59·5	64·2	74·2	81·3	84·1	83·9	82·9	82·4	82·1	78·7	69·4	60·0	75·2
9	63·4	67·9	77·6	84·4	86·7	86·0	84·3	83·7	83·8	80·8	72·4	63·8	77·9
10	66·9	71·2	80·7	87·2	89·1	87·4	85·1	84·8	84·7	82·4	75·0	67·2	80·1
11	69·5	73·8	83·2	89·5	90·8	88·3	86·2	85·6	85·6	83·6	76·9	69·8	81·9
12	71·5	75·9	85·2	91·3	92·4	89·5	87·0	86·3	86·3	84·4	78·2	71·6	83·3
13	73·0	77·3	86·3	92·8	93·3	89·9	87·4	86·5	86·4	84·8	79·0	72·9	84·1
14	73·9	78·3	87·7	93·5	94·1	90·1	87·3	86·4	86·5	85·1	79·6	73·7	84·7
15	74·3	78·8	88·3	93·8	94·0	89·9	87·1	86·1	86·3	85·0	79·6	74·0	84·8
16	74·2	78·7	88·3	92·9	93·1	89·3	86·7	85·7	85·7	84·6	79·3	73·8	84·4
17	72·9	77·8	86·6	90·2	90·9	88·2	85·7	84·9	84·6	83·1	77·0	71·4	82·8
18	68·4	74·2	83·2	87·1	88·4	86·6	84·8	83·9	83·2	80·6	73·9	66·9	80·1
19	65·7	70·9	79·8	84·4	86·2	84·9	83·5	82·8	82·2	79·3	71·9	64·5	78·0
20	64·2	69·0	78·1	82·7	84·2	83·8	82·9	82·4	81·7	78·5	70·5	63·3	76·8
21	62·9	67·8	76·6	81·5	83·1	83·3	82·4	82·0	81·4	77·9	69·9	61·9	75·9
22	62·0	66·7	75·6	80·7	82·3	82·7	82·1	81·8	81·1	77·5	69·0	61·1	75·2
23	61·2	65·8	74·6	80·1	81·7	82·3	81·8	81·5	80·8	77·1	68·4	60·4	74·6
Mean	64·8	69·3	78·5	84·2	85·8	84·9	83·6	83·0	82·6	79·8	72·0	64·4	77·7

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TABLE III.

Normals of Maximum and Minimum Temperature.

	Maximum. (33 years)	Minimum. (33 years)	Wet Minimum. (1901–1920)	Grass Minimum. (1901–1920)
January ..	77·3	55·5	54·6	49·8
February ..	82·0	60·0	58·6	54·7
March ..	90·9	69·3	65·5	64·0
April ..	95·6	75·7	71·8	71·6
May ..	94·5	77·5	74·5	74·7
June ..	91·5	78·8	76·6	76·8
July ..	88·4	78·6	77·3	77·1
August ..	87·6	78·4	77·4	76·9
September	88·0	78·0	76·7	76·0
October ..	87·2	74·3	72·9	71·0
November	82·0	64·3	63·0	59·8
December	77·0	56·0	54·5	49·4
Year ..	86·8	70·5	68·6	66·8

TABLE IV.

Normals of Ground Temperature.

(1890–1904.)

	Surface.			1 ft. depth.			3 ft. depth.			6 ft. depth.
	5¾ h.	13¾ h.	21¾ h.	5¾ h.	13¾ h.	21¾ h.	5¾ h.	13¾ h.	21¾ h.	13¾ h.
January ..	54·0	79·0	57·7	67·7	67·7	68·3	71·6	72·2	71·7	77·3
February ..	60·5	87·2	63·7	72·3	72·0	73·2	73·9	74·3	74·1	76·6
March ..	68·8	103·9	72·7	79.7	79·3	80·8	79·1	79·3	79·2	78·1
April ..	76·3	112·4	79·6	86·9	86·2	88·2	84·9	84·9	85·0	81·2
May ..	80·3	108·0	81·8	89·3	88·4	90·6	88·0	87·7	88·0	83·9
June ..	80·9	97·5	82·1	87·2	86·8	87·8	87·3	87·1	87·2	85·0
July ..	80·9	93·6	82·1	86·1	85·6	86·5	86·2	86·0	86·2	84·9
August	80·7	93·4	82·3	85·9	85·5	86·3	86·2	85·9	86·2	84·8
September	80·3	94·0	81·9	86·0	85·3	86·3	86·4	85·9	86·4	84·9
October ..	75·3	93·4	77·3	83·5	83·1	83·8	85·2	84·9	85·1	84·8
November	64·1	87·8	67·1	76·6	76·5	76·9	80·7	80·8	80·5	83·5
December ..	53·9	79·9	57·4	68·8	69·3	69·1	74·3	75·1	74·3	80·5
Mean ..	71·3	94·2	73·8	80·8	80·5	81·5	82·0	82·0	82·0	82·1

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TABLE V.

Normals of Wet Bulb Temperature.

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
0	57·9	61·9	70·2	75·4	77·1	78·9	79·0	78·9	78·4	75·0	65·8	57·2	71·3
1	57·5	61·5	70·0	75·1	77·0	78·8	78·8	78·9	78·3	74·7	65·6	57·0	71·1
2	57·1	61·2	69·6	74·9	77·0	78·7	78·7	78·6	78·2	74·7	65·3	56·6	70·9
3	56·8	60·9	69·4	74·7	76·9	78·7	78·6	78·6	78·1	74·5	65·0	56·2	70·7
4	56·4	60·4	69·1	74·5	76·7	78·5	78·5	78·4	77·9	74·3	64·7	55·8	70·4
5	56·1	60·1	68·8	74·4	76·7	78·4	78·6	78·3	77·8	74·2	64·4	55·5	70·3
6	55·8	59·8	68·5	74·2	77·0	78·5	78·7	78·3	77·7	74·1	64·2	55·1	70·1
7	55·6	59·9	68·8	75·1	78·0	79·2	79·1	78·9	78·5	74·8	64·5	55·1	70·6
8	56·8	60·8	70·0	76·5	79·0	80·0	79·5	79·4	79·1	75·7	65·4	56·6	71·6
9	58·5	62·0	70·7	77·2	79·8	80·7	80·1	79·9	79·5	75·9	66·7	58·4	72·5
10	59·7	62·8	70·8	77·5	80·4	81·2	80·6	80·4	79·8	76·1	67·2	59·7	73·0
11	60·5	63·3	70·9	77·7	80·9	81·6	81·0	80·7	80·0	76·2	67·6	60·5	73·4
12	61·1	63·7	70·8	77·7	81·1	81·9	81·3	80·9	80·3	76·3	68·2	60·8	73·7
13	61·6	64·0	70·9	77·9	81·3	82·0	81·4	81·1	80·2	76·1	67·7	61·2	73·8
14	61·9	64·2	71·0	78·0	81·4	82·1	81·5	81·1	80·2	76·1	67·2	61·3	73·8
15	62·0	64·2	71·0	77·7	81·2	81·9	81·4	81·0	80·0	76·0	67·3	61·3	73·7
16	62·0	64·2	71·1	77·8	80·9	81·7	81·2	80·8	79·9	75·9	67·5	61·4	73·7
17	62·2	64·1	71·1	77·5	80·2	81·4	81·1	80·5	79·8	76·3	67·9	62·2	73·7
18	61·6	64·4	71·4	77·2	79·6	80·7	80·3	80·1	79·4	75·9	67·9	60·9	73·3
19	60·9	63·8	70·9	76·6	78·7	80·0	79·9	79·6	79·1	75·6	67·4	60·1	72·7
20	60·2	63·3	70·8	76·1	78·3	79·6	79·5	79·5	79·0	75·5	67·1	59·5	72·4
21	59·6	63·0	70·8	75·9	77·9	79·1	79·4	79·3	78·8	75·3	66·7	58·9	72·1
22	59·1	62·6	70·9	75·8	77·6	79·2	79·2	79·2	78·7	75·1	66·3	58·3	71·8
23	58·5	62·4	70·7	75·7	77·3	79·1	79·1	79·0	78·6	75·0	66·0	57·8	71·6
Mean ..	59·1	62·4	70·3	76·3	78·8	80·1	79·9	79·6	79·1	75·4	66·4	58·6	72·2

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TABLE VI.

Normals of Relative Humidity.

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
	%	%	%	%	%	%	%	%	%	%	%	%	%
0	86	84	83	82	83	87	89	90	91	91	88	86	87
1	87	85	85	83	84	88	90	90	91	91	88	86	87
2	87	86	86	84	85	88	90	91	91	92	89	86	88
3	87	86	86	85	85	89	90	91	92	92	89	86	88
4	87	86	87	85	86	89	90	91	92	92	89	86	88
5	87	86	87	86	87	89	91	92	92	92	89	86	89
6	87	86	87	87	87	89	91	92	92	92	89	86	89
7	87	86	87	85	85	87	89	90	91	92	88	86	88
8	84	82	81	79	79	84	87	87	87	86	82	80	83
9	74	70	70	71	73	80	83	84	83	79	72	71	76
10	64	61	61	65	68	77	81	82	80	74	65	62	70
11	57	54	54	58	64	74	79	80	78	70	60	55	65
12	55	51	50	55	61	73	79	79	77	69	58	52	63
13	51	48	46	51	59	72	77	79	77	68	55	49	61
14	47	44	42	49	57	71	77	79	76	66	52	46	59
15	46	42	41	49	57	71	78	80	76	66	52	45	59
16	47	42	42	50	59	73	79	80	78	66	54	46	60
17	52	45	46	56	62	75	80	82	81	72	63	55	64
18	66	57	55	63	67	77	82	84	85	80	74	70	72
19	74	66	63	69	73	81	85	86	87	84	79	76	77
20	79	71	69	73	76	83	86	88	88	87	82	80	80
21	81	75	75	76	79	85	87	88	89	88	85	83	83
22	83	78	78	79	80	86	88	89	89	89	86	84	84
23	85	82	82	81	82	86	89	90	90	90	87	85	86
Mean ..	73	69	68	71	74	81	85	86	86	82	76	72	77

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TABLE VII.

Normals of Absolute Humidity.

(*Vapour tension in inches of mercury.*)

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
0	·454	·523	·705	·834	·883	·952	·964	·954	·947	·845	·610	·443	·759
1	·448	·519	·697	·827	·883	·950	·958	·958	·946	·841	·615	·435	·756
2	·443	·515	·696	·822	·884	·947	·956	·954	·942	·838	·600	·428	·752
3	·437	·509	·689	·818	·883	·945	·952	·952	·937	·835	·594	·423	·748
4	·431	·505	·683	·817	·881	·944	·949	·948	·934	·832	·588	·417	·744
5	·426	·497	·677	·813	·883	·942	·946	·945	·930	·828	·576	·414	·740
6	·422	·494	·670	·815	·890	·947	·949	·945	·930	·826	·577	·407	·739
7	·420	·492	·677	·836	·913	·962	·962	·960	·952	·846	·583	·407	·751
8	·431	·500	·687	·850	·927	·975	·974	·965	·954	·851	·595	·417	·761
9	·431	·485	·668	·840	·929	·985	·979	·971	·953	·831	·583	·420	·756
10	·422	·470	·635	·819	·926	·987	·983	·978	·956	·820	·569	·417	·749
11	·413	·450	·604	·798	·923	·985	989	·984	·954	·807	·554	·405	·739
12	·407	·435	·571	776	·916	·992	·996	·986	·955	·802	·540	·393	·731
13	·400	·425	·556	·760	·909	·992	·997	·991	·946	·789	·530	·385	·723
14	·396	·419	·540	·760	·907	·990	·999	·990	·949	·785	·529	·379	·720
15	·393	·414	·537	·756	·899	·987	1·000	·991	·951	·780	·526	·376	·717
16	·397	·413	·542	·758	·893	·983	·999	·987	·953	·784	·538	·380	·719
17	·422	·427	·564	·775	·892	·981	·990	·982	·955	·816	·582	·425	·734
18	·462	·481	·617	·804	·896	·976	·984	·978	·957	·834	·610	·459	·755
19	·473	·503	·643	·812	·896	·963	·974	·971	·956	·844	·618	·463	·760
20	·473	·510	·665	·818	·894	·956	·971	·969	·956	·844	·619	·463	·761
21	·469	·516	·684	·824	·893	·955	·966	·965	·952	·844	·617	·460	·762
22	·465	·520	·699	·833	·887	·949	·966	·965	·951	·844	·615	·454	·762
23	·462	·525	·705	·837	·886	·950	·964	·961	·950	·841	·611	·448	·762
Mean	·433	·481	·642	·808	·899	·966	·974	·969	·949	·825	·582	·422	·746

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TABLE VIII.

NORMALS OF RAINFALL.

(1905–1924.)

HOUR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	0·02	0·19	0·15	0·06	0·15	0·36	0·47	0·68	0·17	0·10	0·02	0·01
2	0·02	0·07	0·07	0·08	0·10	0·47	0·43	0·55	0·21	0·19	0·01	0·01
3	0·03	0·05	0·05	0·02	0·13	0·52	0·43	0·57	0·39	0·20	0·02	0·02
4	0·01	0·03	0·02	0·05	0·04	0·38	0·53	0·43	0·20	0·15	0·04	0·01
5	0·02	0·03	0·05	0·01	0·03	0·46	0·59	0·66	0·26	0·21	0·04	0·00
6	0·01	0·09	0·03	0·00	0·05	0·54	0·67	0·56	0·39	0·22	0·02	0·01
7	0·04	0·05	0·03	0·00	0·04	0·46	0·68	0·49	0·48	0·13	0·02	0·00
8	0·01	0·05	0·01	0·00	0·03	0·39	0·50	0·61	0·37	0·10	0·01	0·01
9	0·00	0·02	0·05	0·01	0·07	0·43	0·38	0·27	0·38	0·14	0·01	0·01
10	0·01	0·02	0·02	0·01	0·03	0·50	0·62	0·39	0·42	0·15	0·05	0·01
11	0·00	0·02	0·02	0·08	0·05	0·52	0·42	0·60	0·71	0·27	0·01	0·01
12	0·00	0·02	0·02	0·00	0·07	0·59	0·64	0·56	0·50	0·28	0·00	0·00
13	0·00	0·02	0·03	0·01	0·15	0·64	0·75	0·90	1·01	0·32	0·01	0·01
14	0·01	0·02	0·02	0·03	0·07	0·68	0·74	1·14	0·42	0·27	0·01	0·01
15	0·01	0·03	0·02	0·04	0·23	0·83	0·85	0·82	0·56	0·38	0·06	0·00
16	0·00	0·05	0·04	0·05	0·44	0·59	0·80	0·86	0·64	0·28	0·01	0·00
17	0·01	0·05	0·09	0·12	0·33	0·69	0·77	0·65	0·45	0·17	0·04	0·00
18	0·01	0·11	0·12	0·19	0·39	0·73	0·62	0·50	0·37	0·31	0·02	0·00
19	0·00	0·07	0·24	0·30	0·80	0·57	0·44	0·57	0·23	0·24	0·01	0·00
20	0·02	0·12	0·10	0·13	0·53	0·55	0·88	0·27	0·23	0·15	0·01	0·00
21	0·02	0·05	0·11	0·19	0·53	0·50	0·51	0·42	0·22	0·10	0·01	0·00
22	0·05	0·03	0·17	0·32	0·39	0·58	0·51	0·41	0·13	0·12	0·00	0·00
23	0·01	0·05	0·06	0·12	0·19	0·46	0·47	0·36	0·13	0·16	0·01	0·00
24	0·05	0·04	0·05	0·11	0·18	0·43	0·27	0·37	0·13	0·09	0·02	0·01
Month's total ..	0·36	1·28	1·57	1·93	5·02	12·87	13·97	13·64	9·10	4·73	0·46	0·13

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TABLE IX.

Relative Frequency of Clouds—8 Hrs.

(1901–1920.)

Number of occasions in a month.

	Ci.	Ci.-St.	Ci.-Cu.	A.-Cu.	A.-St.	Nb.	Cu.-Nb.	Cu.	St.-Cu.	St.	Fr.-Cu.	Fr.-Nb	Fog.	Clear Skies.
January ..	4·6	2·2	1·0	2·1	0·2	1·5	1·4	2·3	0·7	0·6	0	0	1·4	18·8
February ..	1·2	1·0	0·7	1·8	0·2	2·4	2·9	3·1	0·6	1·0	0·1	0·1	1·4	16·4
March ..	2·8	1·5	1·2	2·1	0·3	2·1	4·5	6·6	0·7	0·6	0·6	0	0·8	14·7
April ..	2·1	2·0	1·2	2·7	0·3	2·5	8·6	9·8	0·2	0·2	1·7	0·1	0	9·6
May ..	2·5	1·8	1·7	2·7	0·5	3·7	10·9	12·6	0·3	0	1·5	0·2	0	5·3
June ..	3·4	3·4	2·0	2·3	1·3	12·7	15·7	9·7	0·1	0·1	0·9	0·3	0	1·0
July ..	3·1	2·7	1·9	3·1	2·5	14·8	17·9	7·6	0·5	0·1	0·9	0·9	0	0·1
August ..	2·4	3·7	1·7	2·8	1·5	14·6	19·0	10·2	0·3	0	0·9	0·3	0	0
September ..	5·1	5·0	1·8	2·1	1·3	9·5	15·2	11·9	0·2	0	0·7	0·3	0·1	1·2
October ..	3·8	3·1	1·9	2·8	0·3	4·3	6·2	7·3	0·3	0·1	0·4	0·1	0	12·1
November ..	5·2	2·3	0·9	2·8	0·3	1·7	2·3	2·4	0·4	0	0·1	0·1	0	17·3
December ..	4·8	2·5	0·9	1·7	0·1	0·7	0·9	1·9	1·1	0·1	0	0·1	0·1	20·9

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TABLE X.

Relative Frequency of Clouds—10 Hrs.

(1901–1920.)

Number of occasions in a month.

	Ci.	Ci.-St.	Ci.-Cu.	A.-Cu.	A.-St.	Nb.	Cu.-Nb.	Cu.	St.-Cu.	St.	Fr.-Cu.	Fr.-Nb.	Fog.	Clear Skies.
January ..	3·5	2·7	0·7	1·5	0·2	1·1	2·3	3·2	0·7	0·6	0·3	0	0·3	19·6
February ..	2·0	1·6	1·4	1·9	0·3	1·7	2·7	4·1	0·3	0·3	0·1	0·1	0·1	17·0
March ..	2·7	2·1	0·7	1·7	0·2	1·3	5·1	7·0	0·3	0·1	0·1	0	0	16·7
April ..	2·5	2·3	1·1	1·9	0·3	1·3	5·7	10·4	0·1	0·1	0·7	0	0	12·1
May ..	2·3	1·9	1·5	1·7	0·7	3·1	10·1	14·7	0·3	0	0·8	0·2	0	6·9
June ..	2·7	2·9	0·9	1·7	2·3	11·3	16·3	12·1	0·1	0·2	0·5	0·3	0	1·5
July ..	2·8	2·5	1·0	1·9	2·9	13·3	18·9	10·5	0·5	0	0·5	5·5	0	0·1
August ..	2·0	3·9	0·9	1·2	2·1	12·7	20·1	13·7	0·1	0	0·9	0·1	0	0
September ..	3·5	4·5	1·2	1·5	1·5	8·7	17·4	15·9	0·3	0	0·3	0·1	0	1·7
October ..	3·1	2·5	1·3	1·7	0·5	4·6	9·5	13·5	0·1	0·1	0·1	0·1	0	7·5
November ..	3·7	3·0	1·1	1·8	0·2	1·3	2·9	4·5	0·2	1·0	0·1	0·1	0	16·7
December ..	4·7	2·8	0·7	1·3	0·1	0·5	0·7	2·3	0·8	0·1	0	0	0·1	21·3

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TABLE XI.

Relative Frequency of Clouds—16 Hrs.

(1901–1920.)

Number of occasions in a month.

	Ci.	Ci.-St.	Ci.-Cu.	A.-Cu.	A.-St.	Nb.	Cu.-Nb.	Cu.	St.-Cu.	St.	Fr.-Cu.	Fr.-Nb.	Fog.	Clear Skies.
January ..	5·6	3·2	0·7	1·2	0·3	1·4	2·6	5·4	0·6	0·1	0	0·1	0	16·8
February ..	2·8	2·2	1·3	1·3	0·2	1·8	3·9	8·1	0·2	0	0	0·1	0	13·7
March ..	4·2	3·2	1·0	1·5	0·5	2·3	4·5	8·9	0·2	0	0	0	0	13·7
April ..	4·3	3·8	0·6	0·9	0·8	2·5	7·3	11·2	0	0	0·1	0	0	10·4
May ..	4·1	3·9	0·9	0·5	1·1	4·6	10·5	14·4	0·1	0	0·1	0·1	0	6·5
June ..	3·9	3·9	0·4	0·8	4·1	12·8	14·9	10·2	0·1	0·1	0·5	0·7	0	1·1
July ..	3·0	5·3	0·5	0·7	3·5	15·8	19·0	10·1	0·5	0	0·3	0·5	0	0
August ..	3·7	6·1	0·9	0·7	3·5	15·3	19·7	11·1	0·5	0	0·3	0·4	0	0·1
September ..	4·7	6·5	0·9	0·6	2·5	13·1	17·0	12·0	0·3	0	0·3	0·5	0	0·4
October ..	4·1	5·2	0·9	0·9	0·7	6·4	12·0	13·0	0·1	0	0	0·1	0	6·2
November ..	4·6	3·1	1·1	1·8	0·3	2·1	4·8	7·5	0·3	0·1	0	0·1	0	12·9
December ..	6·7	3·2	0·9	1·6	0·1	0·7	1·7	3·5	0·9	0	0	0·1	0	17·9

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TABLE XII.

Normals of Cloud Amount.

(1901–1920.)

Whole Sky, 10·0.

Month.	8 hrs.	10 hrs.	16 hrs.
January	2·4	2·1	2·3
February	2·7	2·2	2·4
March	2·9	2·3	2·7
April	3·7	2·9	3·2
May	4·7	4·3	4·2
June	7·5	7·5	7·6
July	8·6	8·5	8·8
August	8·5	8·4	8·7
September	6·9	7·1	7·9
October	3·7	4·3	4·7
November	2·2	2·1	2·8
December	1·6	1·5	1·9

TABLE XIII.

Normals of Hours of Bright Sunshine.*

(1889–1908.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
6	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
7	0·0	0·0	0·0	0·1	0·1	0·1	0·1	0·1	0·0	0·1	0·0	0·0
8	0·3	0·3	0·2	0·3	0·5	0·3	0·3	0·3	0·3	0·5	0·5	0·4
9	0·8	0·7	0·7	0·7	0·7	0·4	0·3	0·4	0·5	0·7	0·9	0·9
10	0·9	0·9	0·9	0·9	0·8	0·5	0·4	0·5	0·5	0·8	0·9	0·9
11	0·9	0·9	0·9	0·9	0·9	0·5	0·4	0·5	0·6	0·8	0·9	0·9
12	0·9	0·9	0·9	0·9	0·9	0·5	0·4	0·5	0·6	0·7	0·9	0·9
13	0·9	0·9	0·9	0·9	0·9	0·5	0·3	0·4	0·5	0·7	0·9	0·9
14	0·9	0·9	0·9	0·9	0·9	0·5	0·3	0·3	0·5	0·7	0·9	0·9
15	0·9	0·9	0·9	0·9	0·8	0·4	0·3	0·3	0·4	0·7	0·9	0·9
16	0·9	0·9	0·9	0·9	0·7	0·4	0·3	0·3	0·3	0·7	0·9	0·9
17	0·3	0·5	0·5	0·5	0·5	0·3	0·2	0 2	0·3	0·5	0·3	0·3
18	0·0	0·1	0·1	0·1	0·2	0·1	0·1	0·1	0·1	0·1	0·0	0·0
19	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
Total ..	7·7	7·9	7·8	8·0	7·9	4·5	3·4	3·9	4·6	7·0	8·0	7·9

* Reliance cannot be placed on values of hours 6, 7, 8 and 17, 18, 19, because drawbacks in situation and exposure of the instrument, *i.e.*, the presence of trees in the vicinity, have undoubtedly vitiated the results, to varying extent in different months, according to sunrise and sunset times.

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TABLE XIV.

Normals of Wind Velocity.

Miles per hour.

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
1	1·1	1·7	2·7	4·0	3·7	3·3	3·0	2·5	1·8	1·1	1·1	1·0	2·3
2	1·2	1·7	2·5	3·7	3·5	3·1	2·9	2·5	1·7	1·2	1·1	1·2	2·2
3	1·3	1·6	2·4	3·4	3·1	3·1	2·8	2·4	1·8	1·1	1·2	1·2	2·1
4	1·4	1·7	2·4	3·3	3·1	3·0	2·8	2·4	1·8	1·2	1·2	1·4	2·1
5	1·5	1·7	2·3	3·1	2·9	2·9	2·8	2·4	1·7	1·2	1·4	1·4	2·1
6	1·3	1·7	2·2	2·9	2·8	2·9	2·8	2·3	1·7	1·2	1·3	1·4	2·0
7	1·2	1·7	2·2	3·2	3·4	3·4	3·3	2·6	2·0	1·3	1·4	1·4	2·3
8	1·5	1·9	2·8	4·6	4·7	4·4	4·2	3·7	3·1	2·2	1·9	1·7	3·1
9	2·1	2·8	4·1	5·5	5·5	5·0	4·8	4·3	3·8	2·9	2·6	2·3	3·8
10	3·1	3·9	5·0	6·0	5·8	5·4	5·3	4·7	4·2	3·4	3·3	3·1	4·4
11	3·8	4·7	5·3	6·2	6·3	5·5	5·4	4·9	4·4	3·7	3·9	3·9	4·8
12	4·2	5·0	5·5	6·3	6·4	5·8	5·7	5·1	4·7	4·1	4·3	4·5	5·1
13	4·3	4·9	5·3	6·1	6·1	5·8	5·6	5·0	4·6	4·1	4·2	4·5	5·0
14	4·4	4·9	5·3	6·1	6·1	5·6	5·4	4·8	4·4	3·9	4·2	4·5	5·0
15	4·4	5·0	5·3	6·1	6·3	5·5	5·3	4·5	4·2	3·9	4·1	4·5	4·9
16	4·2	4·7	5·4	6·3	6·3	5·6	5·0	4·5	4·0	3·6	3·7	4·1	4·8
17	3·1	4·1	4·7	5·9	6·0	5·1	4·6	3·9	3·5	2·8	2·5	2·8	4·1
18	1·5	2·6	3·6	5·5	5·6	4·7	4·1	3·5	2·6	1·6	1·2	1·0	3·1
19	0·9	1·7	3·0	5·3	5·3	4·3	3·6	2·9	2·0	1·2	0·9	0·7	2·7
20	0·9	1·7	3·1	5·3	5·0	4·0	3·3	2·8	2·0	1·2	0·9	0·7	2·6
21	1·0	1·8	3·1	4·9	4·7	3·9	3·2	2·6	1·9	1·2	0·9	0·7	2·5
22	1·1	1·8	3·1	4·7	4·5	3·7	3·1	2·7	2·0	1·2	0·9	0·8	2·5
23	1·1	1·8	3·1	4·5	4·4	3·4	3·0	2·5	1·9	1·2	0·9	0·9	2·4
24	1·1	1·7	2·9	4·2	4·0	3·4	3·0	2·5	1·8	1·1	0·9	0·9	2·3
Mean ..	2·2	2·8	3·6	4·9	4·8	4·3	4·0	3·4	2·8	2·1	2·1	2·1	3·3

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TABLE XV.

Normals of Wind Direction.

(1901–1920.)

Hour.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	N 28°W	N 85°W	S 38°W	S 16°W	S 5°E	S 4°E	S 9°W	S 4°W	S 1°W	N 65°W	N 1°W	N 11°W
2	N 26°W	N 71°W	S 42°W	S 19°W	S 2°E	S 1°E	S 8°W	S 6°W	S	N 47°W	N 2°W	N 13°W
3	N 24°W	N 66°W	S 45°W	S 20°W	S 1°E	S 1°E	S 7°W	S 6°W	S 2°W	N 68°W	N 2°W	N 11°W
4	N 22°W	N 61°W	S 48°W	S 21°W	S 1°E	S 1°E	S 11°W	S 5°W	S 2°W	N 52°W	N 2°W	N 11°W
5	N 22°W	N 59°W	S 51°W	S 22°W	S 1°E	S	S 9°W	S 4°W	S 2°E	N 43°W	N 1°W	N 11°W
6	N 19°W	N 51°W	S 56°W	S 22°W	S 1°E	S 1°E	S 9°W	S 4°W	S 5°E	N 26°W	N 1°W	N 8°W
7	N 18°W	N 46°W	S 55°W	S 22°W	S 2°E	S 5°E	S 7°W	S	S 3°E	N 32°W	N 1°W	N 8°W
8	N 16°W	N 41°W	S 56°W	S 25°W	S	S 6°E	S 8°W	S 3°E	S 1°W	N 28°W	N 2°W	N 8°W
9	N 15°W	N 39°W	S 63°W	S 30°W	S 6°W	S 4°E	S 10°W	S 5°E	S 2°W	N 29°W	N 3°W	N 8°W
10	N 11°W	N 41°W	S 72°W	S 34°W	S 10°W	S	S 8°W	S 2°E	S 2°W	N 27°W	N 2°W	N 7°W
11	N 7°W	N 40°W	S 77°W	S 38°W	S 12°W	S 2°W	S 10°W	S 1°E	S 1°E	N 27°W	N 3°E	N 4°W
12	N 11°W	N 49°W	S 86°W	S 40°W	S 14°W	S 5°W	S 10°W	S	S 2°E	N 26°W	N	N 8°W
13	N 24°W	N 59°W	S 82°W	S 39°W	S 13°W	S	S 9°W	S 2°W	S 3°E	N 30°W	N 7°W	N 14°W
14	N 34°W	N 63°W	S 80°W	S 35°W	S 11°W	S 2°W	S 5°W	S 1°W	S 3°E	N 35°W	N 10°W	N 18°W
15	N 36°W	N 66°W	S 74°W	S 31°W	S 9°W	S 1°E	S 3°W	S 3°E	S 5°E	N 44°W	N 13°W	N 18°W
16	N 35°W	N 71°W	S 70°W	S 26°W	S 8°W	S 2°E	S 3°W	S 3°E	S 1°E	N 32°W	N 12°W	N 17°W
17	N 34°W	N 67°W	S 67°W	S 25°W	S 4°W	S 5°E	S 4°W	S 3°E	S	N 38°W	N 8°W	N 14°W
18	N 29°W	N 61°W	S 63°W	S 22°W	S 1°E	S 4°E	S 4°W	S 1°E	S 3°W	N 37°W	N 3°W	N 12°W
19	N 31°W	N 69°W	S 54°W	S 16°W	S 1°E	S 3°E	S 6°W	S 3°W	S 7°W	N 55°W	N	N 12°W
20	N 33°W	N 77°W	S 44°W	S 12°W	S 2°E	S 4°E	S 7°W	S 4°W	S 6°W	N 53°W	N 2°W	N 12°W
21	N 32°W	N 82°W	S 35°W	S 9°W	S 5°E	S 3°E	S 6°W	S 4°W	S 3°W	N 79°W	N 3°W	N 11°W
22	N 33°W	W	S 34°W	S 9°W	S 6°E	S 4°E	S 6°W	S 3°W	S 2°W	N 71°W	N 3°W	N 13°W
23	N 33°W	N 88°W	S 33°W	S 10°W	S 5°E	S 5°E	S 5°W	S 3°W	S 1°W	N 61°W	N 2°W	N 10°W
24	N 29°W	N 88°W	S 34°W	S 13°W	S 6°E	S 5°E	S 6°W	S 4°W	S 4°W	N 71°W	N 3°W	N 11°W

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TABLE XVI.

Percentage Frequency of Wind Direction : January.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	31·9	3·6	2·6	2·0	3·0	7·6	8·9	15·8	24·7
2	33·1	4·6	2·0	2·0	2·3	7·3	8·6	17·2	22·8
3	34·5	4·9	2·6	1·6	2·3	6·9	8·9	17·4	20·8
4	37·1	6·0	2·0	1·7	2·3	6·0	9·3	18·2	17·5
5	36·0	6·6	1·7	2·3	2·3	6·3	9·2	18·2	17·5
6	36·7	7·0	1·7	2·0	2·0	6·0	7·9	16·8	20·1
7	36·7	7·3	2·3	1·7	2·0	5·6	8·3	15·5	20·8
8	37·0	8·3	2·7	1·7	2·0	5·3	7·3	17·2	18·8
9	41·4	9·5	3·6	1·6	2·9	6·2	7·8	18·3	8·8
10	42·6	11·6	6·6	1·7	1·7	6·3	9·3	18·2	2·3
11	42·4	11·9	9·0	1·7	2·3	6·6	9·0	16·9	0·3
12	39·0	10·3	9·3	2·3	3·0	8·0	9·0	18·7	0·3
13	37·9	6·4	7·1	2·4	1·7	9·4	11·8	23·2	0.3
14	33·9	4·7	5·0	2·7	2·0	10·3	14·6	26·9	0·0
15	33·3	4·0	4·0	3·0	2·6	7·9	16·2	28·7	0·3
16	33·3	3·6	4·3	2·3	4·3	6·9	15·5	29·0	0·7
17	35·2	4·3	3·7	1·6	4·0	7·0	15·3	26·6	2·3
18	35·2	4·0	2·7	1·6	3·7	6·6	12·0	19·9	14·3
19	27·4	3·3	3·0	1·3	3·3	6·3	9·9	15·5	30·0
20	25·5	3·3	2·6	1·7	4·0	7·0	9·6	14·3	32·1
21	26·1	4·3	2·6	1·7	3·6	7·6	9·3	14·2	30·7
22	28·1	4·0	2·6	2·3	3·7	7·9	10·9	14·3	26·1
23	28·3	3·7	3·0	2·0	3·3	7·7	11·3	16·3	24·3
24	29·9	4·0	3·7	2·3	3·0	8·0	10·3	15·3	23·6
Mean ..	34·3	5·9	3·8	2·0	2·8	7·1	10·4	18·9	15·0

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TABLE XVII.

Percentage Frequency of Wind Direction : February.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	17·4	4·0	6·2	3·6	10·1	20·7	13·8	13·1	11·3
2	19·3	4·7	6·5	3·3	8·9	19·0	12·5	14·7	11·1
3	21·5	4·3	5·0	2·9	9·3	18·3	11·1	15·4	12·2
4	21·9	5·4	4·3	2·5	8·2	18·3	11·1	15·1	13·3
5	23·7	5·4	4·3	2·5	7·9	18·3	12·2	14·7	11·1
6	24·7	6·1	4·7	1·8	8·2	16·8	9·7	13·9	14·3
7	24·1	6·8	4·7	1·8	7·2	15·5	10·1	15·1	14·7
8	24·8	7·9	4·7	1·8	6·8	15·1	9·7	15·8	13·3
9	25·8	9·7	6·8	2·5	6·8	16·5	11·8	15·4	4·7
10	23·0	12·8	7·7	4·0	4·8	17·9	15·3	14·2	0·4
11	24·9	9·7	9·0	4·0	4·3	17·0	15·5	15·2	0·4
12	23·5	6·9	9·0	3·6	5·4	17·0	16·2	18·4	0·0
13	20·4	6·1	6·8	3·2	5·4	17·6	18·7	21·9	0·0
14	19·0	4·7	5·7	2·9	4·7	17·6	21·5	24·0	0·0
15	16·2	5·0	5·0	2·2	5·4	16·6	23·8	25·6	0·4
16	15·1	3·6	5·4	2·5	7·2	16·9	22·7	26·3	0·4
17	18·4	4·3	5·4	2·5	7·6	15·5	23·1	22·8	0·4
18	20·5	4·7	4·7	1·8	7·6	14·8	20·5	22·7	2·9
19	17·5	3·9	3·9	1·8	7·8	16·0	16·4	17·5	15·3
20	15·7	4·7	3·9	2·5	8·2	18·9	15·0	15·7	15·4
21	15·3	4·6	5·0	2·5	9·6	19·9	12·5	15·0	15·7
22	15·8	4·3	5·4	2·9	10·4	22·0	13·3	12·6	13·3
23	16·2	4·7	5·4	2·9	11·2	21·6	13·7	14·0	10·4
24	16·4	4·7	5·4	3·2	11·1	21·4	13·6	13·9	10·4
Mean ..	20·0	5·8	5·6	2·7	7·7	17·9	15·2	17·2	8·0

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TABLE XVIII.

Percentage Frequency of Wind Direction: March.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	5·5	2·9	2·9	6·5	22·3	37·7	9·7	7·4	5·1
2	6·1	1·9	3·5	6·1	20·3	37·7	10·7	8·1	5·5
3	7·4	1·6	3·5	5·8	19·7	36·4	10·0	10·3	5·2
4	7·1	1·9	3·5	4·9	18·7	35·5	11·0	10·3	7·1
5	8·1	2·3	3·2	5·8	16·1	33·9	10·0	11·3	9·4
6	8·4	2·3	2·6	5·8	14·3	32·1	11·0	12·0	11·6
7	8·7	2·9	2·9	5·5	14·9	31·3	11·3	10·7	11·9
8	10·7	2·6	3·6	6·2	15·2	32·2	10·7	12·0	6·8
9	10·3	4·5	3·2	5·5	13·2	35·2	12·9	13·5	1·6
10	12·6	4·2	3·9	3·2	11·0	35·3	15·9	13·6	0·3
11	12·9	4·9	5·2	3·2	10·0	32·4	17·2	14·3	0·0
12	14·2	4·9	5·5	2·9	9·4	28·1	19·7	15·2	0·3
13	12·0	3·2	4·9	3·6	10·0	27·8	21·7	16·8	0·0
14	10·6	3·2	2·9	3·6	11·9	27·0	23·5	17·1	0·3
15	7·1	2·9	4·2	3·9	13·0	25·6	27·2	15·9	0·3
16	6·2	2·3	3·6	4·2	16·6	23·7	26·6	16·6	0·3
17	6·8	1·9	3·9	4·2	19·0	22·9	24·9	16·1	0·3
18	8·4	1·9	2·9	4·2	21·3	22·9	20·7	14·9	2·9
19	8·1	1·9	3·6	4·2	22·3	24·9	15·9	12·3	6·8
20	7·2	2·3	3·6	4·2	26·3	26·0	12·0	11·1	7·5
21	5·8	2·3	3·9	5·2	28·7	28·7	10·3	8·4	6·8
22	5·5	1·9	4·2	5·5	28·4	33·2	8·7	9·0	3·6
23	6·1	2·3	3·9	6·1	28·0	34·7	8·4	7·1	3·6
24	5·5	2·3	2·9	6·2	25·9	37·9	8·4	6·2	4·9
Mean ..	8·4	2·7	3·7	4·9	18·2	31·0	14·9	12·1	4·3

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TABLE XIX.

Percentage Frequency of Wind Direction: April.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	1·7	1·7	4·3	11·3	35·6	37·6	4·3	2·0	1·7
2	1·7	1·3	3·7	10·7	34·0	39·7	5·0	2·3	1·7
3	1·3	1·0	3·7	10·7	32·3	41·0	5·3	2·0	2·7
4	1·3	1·7	4·3	9·7	29·9	41·9	5·7	2·0	3·7
5	1·7	1·4	4·4	9·4	30·1	40·5	6·4	2·0	4·0
6	1·0	1·3	4·3	10·3	29·3	41·0	6·0	3·0	3·7
7	1·0	1·4	4·4	10·7	29·4	40·8	6·0	3·4	3·0
8	1·7	1·7	4·0	9·1	29·2	44·0	6·4	3·7	0·4
9	1·7	1·7	3·0	6·7	27·8	47·8	7·7	3·7	0·0
10	2·3	1·0	3·0	5·0	26·9	46·9	10·3	4·3	0·3
11	3·0	1·0	2·7	5·0	25·3	44·7	12·0	6·3	0·0
12	4·0	1·0	3·0	4·0	27·1	39·8	14·1	7·0	0·0
13	3·0	1·0	2·3	3·7	30·0	37·0	16·7	6·3	0·0
14	3·0	1·0	3·0	4·4	32·8	35·1	15·7	5·0	0·0
15	2·0	0·7	3·0	5·7	35·1	34·8	14·4	4·4	0·0
16	1·7	0·7	3·3	6·3	39·3	31·0	12·7	5·0	0·0
17	2·0	0·7	2·7	5·7	41·8	31·5	10·7	5·0	0·0
18	3·0	1·0	2·7	6·1	44·0	28·5	8·4	5·0	1·4
19	1·7	1·0	3·7	7·7	45·8	28·4	6·7	3·7	1·8
20	2·7	2·0	4·0	10·4	45·2	26·8	5·0	3·4	0·7
21	1·7	1·4	6·4	9·8	46·5	27·3	4·4	2·4	0·4
22	1·7	1·3	7·0	10·3	44·3	28·7	3·3	2·7	0·7
23	2·3	1·0	6·0	12·0	41·7	31·0	3·3	2·3	0·3
24	2·0	1·7	5·0	12·4	37·1	35·1	3·7	2·4	0·7
Mean ..	2·1	1·2	3·9	8·2	35·0	36·7	8·1	3·7	1·1

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TABLE XX.

Percentage Frequency of Wind Direction: May.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	2·0	3·0	8·9	20·5	35·8	22·5	2·7	2·3	2·3
2	1·3	3·0	7·2	21·7	33·9	24·0	3·9	1·6	3·3
3	1·6	3·0	7·2	19·4	33·6	24·4	3·6	2·3	4·9
4	2·0	2·3	7·9	20·2	32·5	25·8	3·7	2·0	3·6
5	2·0	2·9	7·2	20·0	32·5	24·9	3·6	2·3	4·6
6	2·3	2·9	6·9	20·0	30·5	25·3	3·6	2·9	5·6
7	2·7	3·7	9·4	18·5	33·2	24·5	3·7	2·7	1·7
8	3·6	4·3	10·2	15·1	33·6	27·3	3·3	2·3	0·3
9	3·3	3·6	9·5	14·1	31·5	31·5	4·3	2·0	0·3
10	3·0	3·0	8·9	12·2	32·9	32·6	5·3	2·0	0·3
11	1·7	3·0	9·2	10·2	34·0	34·7	4·9	2·3	0·0
12	2·0	2·3	7·6	10·6	35·3	33·0	6·9	2·3	0·0
13	2·3	2·3	6·9	10·9	37·6	31·7	6·3	2·0	0·0
14	2·0	2·0	7·5	10·5	39·0	30·5	5·9	2·3	0·3
15	2·3	2·3	6·9	11·2	40·9	29·7	4·0	2·3	0·3
16	2·3	3·0	5·9	11·9	42·5	28·6	3·6	2·0	0·3
17	2·3	2·0	6·9	13·5	44·8	24·7	3·6	2·0	0·3
18	3·0	2·3	8·2	15·5	43·8	22·1	3·3	1·6	0·3
19	3·3	2·3	7·3	16·2	43·6	20·1	3·0	3·0	1·3
20	3·3	2·3	7·6	17·4	42·5	19·4	3·6	3·0	1·0
21	2·3	3·6	8·9	18·1	41·8	18·8	3·6	2·0	1·0
22	3·0	3·0	8·2	19·4	41·5	18·8	2·3	2·3	1·6
23	2·3	3·0	8·6	19·8	39·2	21·1	3·6	1·6	1·0
24	2·3	3·0	8·6	20·7	38·2	20·1	3·0	2·3	2·0
Mean ..	2·4	2·8	8·0	16·1	37·3	25·7	4·0	2·2	1·5

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TABLE XXI.

Percentage Frequency of Wind Direction: June.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	1·7	2·3	7·3	21·7	36·5	19·4	5·0	1·7	4·3
2	1·7	2·3	7·7	20·3	34·9	21·3	5·6	2·0	4·3
3	1·7	2·3	8·3	19·7	33·7	21·0	5·6	2·7	5·0
4	1·7	2·3	8·4	19·8	32·2	22·1	5·7	2·7	5·0
5	2·0	2·3	8·4	19·5	31·2	23·2	5·4	3·0	5·0
6	1·3	2·3	8·9	20·5	31·4	21·4	6·9	2·3	5·0
7	1·3	3·3	10·0	21·6	31·3	21·0	6·3	2·0	3·0
8	2·3	3·0	11·3	22·2	29·5	22·9	6·3	1·7	1·0
9	2·3	3·0	12·3	20·9	27·2	25·5	6·3	1·7	1·0
10	1·7	3·0	13·1	19·2	24·6	30·0	5·7	2·4	0·3
11	2·3	3·7	12·4	18·5	23·5	28·5	7·4	3·0	0·7
12	2·7	3·7	13·1	14·4	27·1	27·1	9·0	2·7	0·3
13	2·3	4·0	13·6	16·6	26·9	24·9	9·0	2·7	0·0
14	2·3	3·0	12·7	17·1	27·4	26·4	7·7	3·0	0·3
15	2·7	4·0	11·6	16·2	32·5	22·9	6·3	3·7	0·3
16	3·0	3·0	11·0	17·0	35·7	20·7	6·0	3·3	0·3
17	2·3	2·3	11·0	20·3	35·7	20·0	5·7	2·3	0·3
18	2·4	2·4	9·1	20·6	36·0	20·6	5·1	2·4	1·7
19	2·3	2·0	7·7	21·7	35·8	20·4	4·7	2·3	3·0
20	2·7	2·0	8·0	21·3	36·9	19·6	4·3	2·7	2·7
21	1·7	2·3	7·0	22·9	35·8	20·9	5·0	2·3	2·3
22	1·7	2·0	7·0	23·1	37·1	20·1	5·0	2·3	1·7
23	2·3	2·3	7·7	22·5	36·3	19·1	5·4	2·0	2·3
24	2·0	2·3	8·7	22·3	35·6	18·3	6·0	2·7	2·3
Mean ..	2·1	2·7	9·8	20·0	32·3	22·4	6·1	2·5	2·2

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TABLE XXII.

Percentage Frequency of Wind Direction: July.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	1·9	1·0	6·8	19·4	25·9	29·1	7·8	2·6	5·5
2	1·9	1·3	7·1	19·4	24·9	29·1	7·1	2·9	6·2
3	1·3	1·6	8·1	19·4	23·9	29·7	7·7	2·3	6·1
4	1·9	1·3	8·1	19·4	22·6	30·7	9·0	2·6	4·5
5	1·6	1·6	8·4	20·1	21·0	29·8	9·1	2·3	6·2
6	1·3	1·6	9·4	19·4	21·0	30·1	9·7	1·9	5·5
7	1·6	2·3	10·7	19·0	21·0	31·0	8·7	2·3	3·6
8	1·6	2·9	13·3	16·8	19·7	31·4	10·7	1·9	1·6
9	1·9	1·9	14·5	16·7	18·0	31·8	11·9	2·2	1·0
10	1·6	1·9	15·1	16·4	19 0	30·7	11·9	2·2	1·0
11	1·6	2·9	14·4	16·3	18·2	30·4	12·4	3·2	0·6
12	1·6	3·2	14·2	15·1	20·3	30·0	11·6	3·5	0·3
13	1·9	2·6	13·3	16·2	21·7	30·4	11·3	2·3	0·3
14	2·3	3·9	13·3	15·8	24·5	26·8	11·0	1·9	0·7
15	2·3	3·2	11·3	18·7	26·1	26·8	9·4	1·9	0·3
16	1·6	2·3	11·3	17·8	29·5	26·9	8·4	1·6	0·7
17	1·3	1·9	9·7	18·4	30·7	26·9	7·8	2·3	1·0
18	1·6	1·0	8·1	19·8	33·1	25·0	7·8	2·6	1·0
19	1·6	1·6	7·4	18·4	31·7	26·8	7·8	2·3	2·3
20	1·6	1·3	6·8	19·7	30·7	26·8	7·4	2·9	2·9
21	1·0	1·0	6·8	19·3	31·9	25·5	7·4	3·2	3·9
22	1·3	1·3	7·1	19·8	30·7	25·9	7·4	3·2	3·2
23	1·0	1·6	7·4	20·3	29·3	26·8	6·8	2·9	3·9
24	1·6	1·0	7·4	20·7	26·8	28·5	6·8	2·3	4·8
Mean ..	1·6	1·9	10·0	18·4	25·1	28·6	9·0	2·5	2·8

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TABLE XXIII.

Percentage Frequency of Wind Direction: August.

(1901-1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	1·6	1·3	7·7	19·9	28·0	23·8	7·7	2·6	7·4
2	1·6	1·6	7·1	18·7	25·8	25·5	7·7	2·3	9·7
3	1·9	1·9	7·1	18·7	23·9	24·5	8·0	2·3	11·6
4	2·3	1·6	8·7	19·9	23·2	25·4	8·4	2·3	8·4
5	2·3	2·3	8·7	19·3	22·5	25·1	8·0	2·3	9·6
6	2·3	2·3	10·3	18·0	20·6	24·4	8·7	2·3	11·3
7	1·9	2·3	11·3	19·8	21·1	24·3	8·4	3·3	8·8
8	2·3	2·9	14·5	20·7	20·0	23·9	9·7	3·2	2·9
9	1·9	3·2	15·9	21·7	17·5	25·9	9·1	3·6	1·3
10	2·3	3·8	16·1	20·3	16·7	27·3	10·3	2·9	0·3
11	1·9	2·9	16·8	19·7	17·1	27·1	10·0	4·2	0·3
12	2·3	2·9	18·1	16·8	18·4	28·1	9·0	4·2	0·3
13	2·3	3·2	15·2	17·5	20·4	28·1	8·7	4·2	0·3
14	2·6	2·3	14·8	19·3	20·9	26·1	9·7	3·9	0·7
15	2·3	2·6	13·9	20·7	24·3	23·6	7·8	4·2	0·6
16	2·9	2·3	11·3	22·0	27·5	23·6	7·4	2·6	0·3
17	3·5	2·2	9·9	21·5	30·1	22·1	6·7	2·2	1·6
18	2·9	1·9	8·7	20·9	31·2	23·2	6·1	2·3	2·9
19	2·9	1·9	6·8	20·3	30·0	23·9	6·8	1·9	5·5
20	2·6	1·0	6·1	21·3	29·7	23·5	7·4	1·9	6·5
21	2·3	1·0	6·5	21·0	29·5	23·6	7·8	1·9	6·5
22	1·6	1·0	6·8	20·8	30·2	23·1	7·5	1·9	7·1
23	1·9	1·3	6·8	20·1	29·1	22·0	7·4	2·6	8·7
24	2·3	1·3	6·4	19·6	28·6	22·5	7·7	2·3	9·3
Mean ..	2·2	2·1	10·6	19·9	24·4	24·6	8·2	2·8	5·1

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TABLE XXIV.

Percentage Frequency of Wind Direction: September.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	3·7	3·0	8·3	17·3	22·0	19·0	7·7	3·3	15·7
2	3·3	3·3	8·7	17·7	22·4	19·7	7·0	3·3	14·4
3	3·7	3·3	8·3	17·0	21·3	20·0	7·3	3·3	15·7
4	5·0	3·0	9·4	16·4	20·1	20·9	7·4	3·3	14·4
5	5·0	3·7	10·3	15·9	18·9	20·6	6·3	3·0	16·3
6	5·3	3·7	11·0	16·3	17·7	19·0	7·0	3·0	17·0
7	5·3	3·7	12·0	16·6	18·9	19·6	8·0	3·7	12·3
8	5·7	3·7	13·0	18·3	18·3	23·0	9·7	5·0	3·3
9	5·3	3·7	14·3	19·7	15·7	24·7	11·3	5·0	0·3
10	5·7	4·7	15·9	17·3	15·3	23·6	12·3	5·0	0·3
11	4·7	4·0	18·3	16·7	15·0	23·3	11·7	6·3	0·0
12	5·0	4·3	17·3	17·9	14·3	22·9	11·0	7·0	0·3
13	4·4	3·7	16·8	18·5	17·5	22·2	10·4	6·4	0·4
14	5·3	4·3	15·6	18·3	17·9	21·6	10·6	6·0	0·3
15	6·0	5·0	14·3	18·9	19·6	19·6	10·0	6·0	0·7
16	5·3	4·3	11·7	19·0	22·7	20·3	9·7	5·3	1·7
17	5·3	4·0	10·3	20·9	21·3	20·9	8·6	6·0	2·7
18	5·4	3·7	9·1	18·8	23·2	20·5	8·4	6·1	5·2
19	4·4	3·0	7·7	17·1	21·2	21·5	7·7	5·4	12·1
20	4·3	2·6	7·7	18·3	21·3	20·9	8·3	5·0	11·6
21	3·7	3·0	7·7	19·3	22·0	19·7	7·7	5·3	11·7
22	4·3	2·7	7·9	19·9	23·2	19·6	8·3	4·7	9·6
23	3·7	3·0	8·0	19·0	22·0	19·3	8·0	4·0	13·0
24	4·3	3·0	7·3	17·3	22·3	19·6	8·0	4·0	14·3
Mean ..	4·8	3·6	11·3	18·0	19·8	20·9	8·9	4·8	8·1

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TABLE XXV.

Percentage Frequency of Wind Direction: October.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	14·5	4·5	7·4	9·4	7·1	11·3	8·7	10·0	27·1
2	14·6	4·9	8·1	8·8	6·2	10·4	9·1	11·1	26·9
3	14·4	4·2	7·4	9·6	7·1	10·9	9·3	10·0	27·2
4	15·9	3·6	8·1	9·4	6·5	10·7	9·1	11·3	25·6
5	15·8	3·9	8·7	9·7	6·8	10·0	8·7	11·6	24·8
6	17·3	4·2	9·3	9·0	6·7	10·6	7·4	9·9	25·6
7	16·5	5·2	9·4	10·0	6·8	11·0	8·7	10·0	22·6
8	19·0	5·5	11·3	12·6	6·4	12·3	10·7	12·6	9·7
9	19·1	6·8	13·6	11·3	6·5	12·6	13·6	13·6	2·9
10	19·3	8·0	13·5	11·3	6·4	13·8	13·2	13·5	1·0
11	18·3	7·4	15·8	10·3	4·8	15·1	13·2	13·5	1·6
12	17·0	9·0	16·4	8·4	5·5	16·4	12·6	13·2	1·6
13	18 3	8·0	14·8	9·0	5·8	15·5	11·9	15·8	1·0
14	18·4	7·1	13·2	10·7	7·4	14·2	11·0	17·4	0·6
15	20·0	6·1	11·9	11·0	7·4	14·5	12·3	15·8	1·0
16	21·9	5·8	11·9	11·3	7·4	13·2	11·3	15·5	1·6
17	23·1	4·9	10·4	11·1	7·8	13·7	10·7	14·3	4·2
18	19·7	4·8	10·0	10·7	7·7	12·6	9·4	11·3	13·9
19	16·8	3·6	8·7	10·0	7·8	11·3	8·1	9·1	24·6
20	15·2	3·6	10·4	11·3	7·5	11·3	7·5	9·4	23·9
21	14·6	3·6	9·1	11·4	7·5	11·4	8·1	10·1	24·4
22	14·9	3·9	9·4	11·0	7·8	10·7	9·1	9·4	23·9
23	14·6	4·2	8·7	10·4	7·1	10·7	9·1	9·7	25·6
24	14·2	3·5	7·4	10·0	7·1	10·7	8·7	10·3	28·1
Mean ..	17·2	5·3	10·6	10·3	6·9	12·3	10·1	12·0	15·4

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TABLE XXVI.

Percentage Frequency of Wind Direction: November.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	38·7	7·7	5·3	2·3	1·3	3·0	4·3	9·7	27·7
2	41·3	7·3	5·0	2·7	1·3	2·0	4·3	11·0	25·0
3	41·3	8·7	5·0	2·4	1·0	2·4	4·4	12·8	22·0
4	44·1	8·4	4·1	2·7	1·0	2·4	3·7	11·8	22·0
5	44·8	10·1	4·7	2·4	1·0	3·0	4·1	12·1	17·8
6	43·8	11·1	5·0	1·7	1·0	2·7	4·0	12·4	18·4
7	42·8	10·4	4·7	2·4	0·7	3·4	4·0	11·4	20·0
8	47·0	11·0	5·0	2·3	1·0	3·7	4·7	13·7	11·7
9	48·5	13·7	5·4	2·4	1·0	3·7	5·7	16·4	3·3
10	45·5	17·4	8·0	2·0	1·0	4·4	6·4	14·4	1·0
11	44·3	17·0	10·0	1·7	1·3	5·0	6·0	14·3	0·3
12	45·2	13·7	10·4	1·7	1·0	5·0	5·7	17·1	0·4
13	44·8	10·4	8·4	2·4	1·0	5·0	6·7	21·1	0·4
14	46·2	8·7	7·0	2·4	1·0	5·0	6·4	23·1	0·4
15	47·0	7·0	6·3	2·3	0·7	5·0	8·0	22·7	1·0
16	48·9	7·7	5·0	2·3	1·0	4·3	8·3	20·3	2·3
17	50·5	7·7	4·7	2·7	1·0	4·0	5·4	17·7	6·4
18	44·7	7·3	4·7	2·7	0·7	3·7	3·7	11·0	21·7
19	37·0	6·7	4·7	3·0	1·0	3·7	3·3	7·7	31·7
20	36·5	5·7	5·0	1·7	1·0	4·4	3·0	7·7	35·1
21	36·8	6·7	5·0	2·0	1·0	4·4	4·4	8·7	31·1
22	35·9	7·0	4·0	2·3	1·0	4·3	4·0	8·3	33·2
23	37·3	6·7	5·7	2·7	1·0	3·7	4·7	9·0	29·3
24	38·2	7·0	5·0	2·7	1·0	3·0	5·0	10·0	28·2
Mean ..	43·0	9·4	5·8	2·3	1·0	3·8	5·0	13·5	16·3

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TABLE XXVII.

Percentage Frequency of Wind Direction: December.

(1901–1920.)

Hour.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calm.
1	43·3	5·3	1·0	0·3	0·7	2·3	2·9	16·7	27·5
2	47·5	4·9	1·0	0·3	0·3	2·0	3·6	19·4	21·0
3	49·9	5·6	1·0	0·3	0·3	1·6	3·6	18·0	19·7
4	49·5	6·6	1·3	0·3	0·7	1·6	2·9	20·7	16·3
5	52·6	5·2	1·0	0·3	0·3	2·3	2·9	18·0	17·4
6	51·8	6·9	1·3	0·3	0·3	1·3	2·3	18·7	17·0
7	52·0	6·2	1·6	0·3	0·3	1·6	2·9	17·0	18·0
8	53·0	7·5	1·6	0·3	0·0	1·6	2·9	18·0	15·1
9	58·2	8·9	1·6	0·3	0·3	2·0	3·0	20·1	5·6
10	58·2	11·5	2·6	0·3	0·3	2·3	3·6	19·4	1·6
11	55·8	12·8	4·3	0·3	0·7	2·6	3·3	18·7	1·6
12	54·0	10·9	3·6	0·7	1·0	3·0	4·3	22·7	0·0
13	53·8	7·5	2·3	0·7	0·7	2·9	6·8	25·1	0·4
14	51·3	5·5	2·3	0·7	1·0	2·9	7·2	29·1	0·0
15	51·5	5·6	2·0	0·3	0·7	2·3	7·5	29·9	0·3
16	54·3	4·6	1·7	0·3	0·7	2·0	6·6	29·3	0·7
17	58·6	4·6	1·3	0·3	0·3	1·7	5·3	24·4	3·6
18	49·4	4·3	1·0	0·3	0·3	1·6	3·6	17·7	21·9
19	38·5	3·6	1·0	0·3	0·3	1·7	3·0	13·8	37·8
20	36·2	4·3	0·7	0·3	0·3	1·7	3·6	13·2	39·8
21	36·3	3·9	1·0	0·3	0·3	1·6	2·9	12·8	40·8
22	36·9	3·9	1·0	0·3	0·7	1·6	3·6	13·7	38·2
23	39·6	4·3	1·3	0·3	0·7	1·3	2·9	14·1	35·6
24	42·8	4·3	1·3	0·3	0·7	2·0	2·9	16·0	29·7
Mean ..	49·0	6·2	1·6	0·3	0·5	2·0	3·9	19·4	17·1

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TABLE XXVIII.

Normals of Upper Air Winds.

(*Alipore and Diamond Harbour Combined.*)

Height above sea=0·01 Km.

Height in Kms. above sea.	January.					February.					March.				
	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years	N.	Vm.	Vr.	Dn.	No. of years.
0·2	116	5·0	2·6	25	4	111	5·9	1·6	307	4	122	6·7	4·3	240	4
0·5	142	5·1	3·6	354	5	125	5·9	2·7	308	5	140	6·5	3·7	255	5
1·0	141	5·0	3·8	329	5	121	5· 9	4·2	299	5	139	5·7	3·6	270	5
1·5	135	6·6	5·5	309	5	118	7·5	6·5	297	5	135	5·9	4·4	286	5
2·0	124	8·3	7·0	304	5	113	10·3	9·3	295	5	129	7·0	5·8	292	5
2·5	116	10·2	8·8	296	5	96	12·5	11·4	295	5	119	8·4	7·4	295	5
3·0	101	11·1	9·8	287	5	85	14·0	13·0	293	5	115	9·6	8·8	297	5
3·5	84	12·2	11·2	282	5	73	14·5	13·5	291	4	101	10·4	9·6	297	5
4·0	73	13·1	11·9	274	5	65	15·3	14·3	290	4	96	10·9	10·0	295	4
4·5	58	14·0	13·1	271	5	55	17·3	16·5	286	4	87	11·6	10·5	290	4
5·0	53	15·6	14·5	271	5	43	18·6	17·5	280	4	81	12·1	11·0	290	4
6·0	34	18·8	17·9	267	4	28	21·1	20·5	275	4	68	14·2	13·1	280	4
7·0	12	21·5	20·0	262	4	11	24·3	23·0	267	2	42	15·7	14·4	277	4
8 0	4	22·7	20·9	262	3	3	23·8	23·5	279	2	17	18·3	16·9	274	4
9·0	..	..	..	..	..	..	..	..	..	..	4	14·6	14·3	245	2
10·0	..	..	..	..	..	..	..	..	..	..	2	8·5	8·5	256	1
11·0	..	..	..	..	..	..	..	..	..	..	1	21·0	21·0	240	1

N=Number of observations.
Vm=Mean velocity irrespective of direction (arithmetical mean).
Vr=Mean resultant velocity (geometrical mean).
Dn=Resultant direction.
Velocity in metres per second.

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TABLE XXIX.

Normals of Upper Air Winds.

(Alipore and Diamond Harbour Combined.)

Height above sea=0·01 Km.

Height in Kms. above sea.	April.					May.					June.				
	N.	Vm.	V r.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.
0·2	118	8·3	7·2	206	4	121	7·7	6·8	205	4	124	8·3	6·6	194	4
0·5	163	8·7	6·7	217	6	183	8·6	7·4	211	7	185	8·1	6·6	214	7
1·0	149	7·8	5·2	242	6	168	7·2	5·6	228	7	158	7·5	5·2	231	7
1·5	132	7·2	5·0	263	6	149	6·0	4·0	255	7	130	6·5	3·5	258	7
2·0	112	6·9	5·4	276	6	134	5·7	3·6	281	7	102	6·4	3·1	279	7
2·5	99	7·8	6·7	287	6	119	6·3	4·3	305	7	82	6·3	2·9	303	7
3·0	88	9·1	8·1	290	6	109	7·6	5·7	313	7	73	6·8	4·0	319	7
3·5	79	10·5	9·5	295	6	102	8·8	7·2	315	7	57	7·2	4·4	333	7
4·0	69	12·0	11·1	298	6	90	10·0	8·4	313	7	43	6·9	3·7	340	6
4·5	65	13·1	12·1	299	6	76	9·4	7·5	307	7	39	6·1	2·7	357	6
5·0	55	12·7	11·7	296	5	71	8·9	6·6	295	6	35	5·8	1·7	11	6
6·0	44	12·9	11·7	287	5	56	8·4	5·8	280	5	22	5·8	2·9	102	4
7·0	22	14·2	13·3	284	5	41	9·0	6·0	288	5	15	5·7	2·8	125	4
8·0	14	15·2	13·8	275	4	30	9·1	5·4	265	5	9	6·7	3·2	132	4
9·0	8	14·9	13·9	278	3	23	10·3	6·5	261	4	7	7·2	5·1	98	4
10·0	3	9·2	6·2	299	2	13	8·9	6·6	249	4	6	7·9	3·3	114	3
11·0	2	12·5	8·3	270	2	10	9·7	6·2	254	4	4	9·4	6·9	172	3
12·0	1	6·0	6·0	300	1	4	11·5	11·2	251	3	3	8·8	8·2	193	2
13·0	1	7·0	7·0	320	1	4	11·7	11·5	242	3	1	4·0	4·0	195	1
14·0	..	..	..	..	..	1	9·0	9·0	235	1	..	..	..	..	..

N=Number of observations
Vm=Mean velocity irrespective of direction (arithmetical mean).
Vr=Mean resultant velocity (geometrical mean).
Dn=Resultant direction.
Velocity in metres per second.

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TABLE XXX.

Normals of Upper Air Winds.

(*Alipore and Diamond Harbour Combined.*)

Height above sea=0·01 Km.

Height in Kms. above sea.	July.					August.					September.				
	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.
0·2	107	7·5	4·5	199	4	84	5·9	2·8	178	3	87	5·7	3·5	189	3
0·5	167	7·6	4·6	210	7	166	6·7	3·1	215	7	156	6·2	3·0	178	6
1·0	140	7·5	4·5	221	7	141	6·1	2·4	215	7	147	6·0	2·5	173	6
1·5	103	7·0	4·2	218	7	117	5·6	2·3	216	7	130	5·6	2·0	172	6
2·0	78	6·6	3·8	223	7	85	5·5	2·3	210	7	114	5·3	1·7	159	6
2·5	58	6·5	3·3	226	7	68	5·2	2·1	181	7	99	5·2	1·7	151	6
3·0	46	5·5	1·8	197	6	60	4·9	2·0	160	7	89	5·2	1·7	159	6
3·5	36	5·3	2·3	192	6	51	5·0	2·5	142	7	79	5·4	1·9	170	6
4·0	32	5·2	2·1	193	5	42	4·9	2·4	146	6	73	5·6	2·1	179	6
4·5	28	4·5	2·1	194	5	37	4·9	2·5	143	6	65	5·3	2·1	160	6
5·0	25	4·1	2·0	170	5	33	5·3	3·3	141	6	62	5·3	2·2	156	6
6·0	18	5·3	3·2	147	5	27	4·9	3·7	134	5	47	5·0	1·7	151	5
7·0	9	5·2	4·5	119	4	17	6·0	5·1	116	5	37	5·2	2·3	129	5
8·0	9	7·6	7·4	111	5	10	7·5	6·9	110	5	31	5·7	2·3	131	5
9·0	7	10·8	10·6	100	4	9	9·7	9·1	102	4	17	5·0	1·5	120	5
10·0	3	15·7	15·4	97	3	6	10·2	10·1	100	3	15	7·1	3·6	147	5
11·0	1	16·0	16·0	90	1	2	13·5	13·1	93	2	10	6·1	1·9	139	4
12·0	1	16·0	16·0	95	1	1	14·0	14·0	90	1	6	7·0	5·0	138	4
13·0	..	..	..	..	..	1	18·0	18·0	70	1	6	7·3	5·4	124	4
14·0	..	..	..	..	..	..	..	..	..	..	4	9·7	9·1	97	3
15·0	..	..	..	..	..	..	..	..	..	..	2	16·3	15·9	104	1
16·0	..	..	..	..	..	..	..	..	..	..	1	20·0	20·0	85	1

N=Number of observations.

Vm=Mean velocity irrespective of direction (arithmetical mean).

Vr=Mean resultant velocity (geometrical mean).

Dn=Resultant direction.

Velocity in metres per second.

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TABLE XXXI.

Normals of Upper Air Winds.

(Alipore and Diamond Harbour Combined.)

Height above sea=0·01 Km.

Height in Kms. above sea.	October.					November.					December.				
	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.	N.	Vm.	Vr.	Dn.	No. of years.
0·2	87	4·6	1·2	22	3	85	6·3	5·3	18	3	90	6·5	5·9	18	3
0·5	165	4·5	1·2	5	6	166	5·8	4·9	21	6	179	4·9	4·0	9	6
1·0	163	4·5	1·8	1	6	167	5·2	4·1	6	6	180	5·1	4·1	346	6
1·5	161	4·9	2·2	347	6	157	5·0	3·6	349	6	173	5·9	4·5	332	6
2·0	153	5·2	1·8	318	6	146	5·3	3·0	311	6	163	6·6	5·1	319	6
2·5	142	5·3	2·3	281	6	135	5·8	3·6	287	6	152	8·0	6·5	308	6
3·0	134	5·9	3·5	264	6	129	6·7	4·9	281	6	142	8·9	7·5	297	6
3·5	125	6·8	4·5	257	6	118	7·7	6·5	277	6	128	9·9	8·5	290	6
4·0	116	7·5	5·1	256	6	110	8·8	7·7	277	6	122	11·1	9·9	285	6
4·5	110	8·0	5·7	259	6	105	9·9	8·9	275	5	117	12·7	11·5	281	6
5·0	100	8·3	6·3	262	6	101	11·3	10·2	274	5	111	14·3	13·0	280	6
6·0	86	9·2	7·2	266	6	92	13·6	12·7	274	5	82	16·0	14·7	274	6
7·0	61	10·0	8·1	265	6	67	16·1	15·0	273	5	44	17·8	16·3	272	5
8·0	35	11·8	9·2	258	6	28	15·6	14·6	277	5	15	19·5	17·3	270	5
9·0	23	11·5	7·9	252	5	12	15·2	14·7	273	5	4	15·0	11·5	301	4
10·0	10	10·3	7·8	263	4	3	17·5	17·2	269	3	2	8·5	6·5	332	2
11·0	5	10·3	7·6	234	4	1	18·0	18·0	250	1	2	10·3	6·3	303	2
12·0	2	12·5	6·7	223	2										

N=Number of observations.

Vm=Mean velocity irrespective of direction (arithmetical mean).

Vr=Mean resultant velocity (geometrical mean).

Dn=Resultant direction.

Velocity in metres per second.

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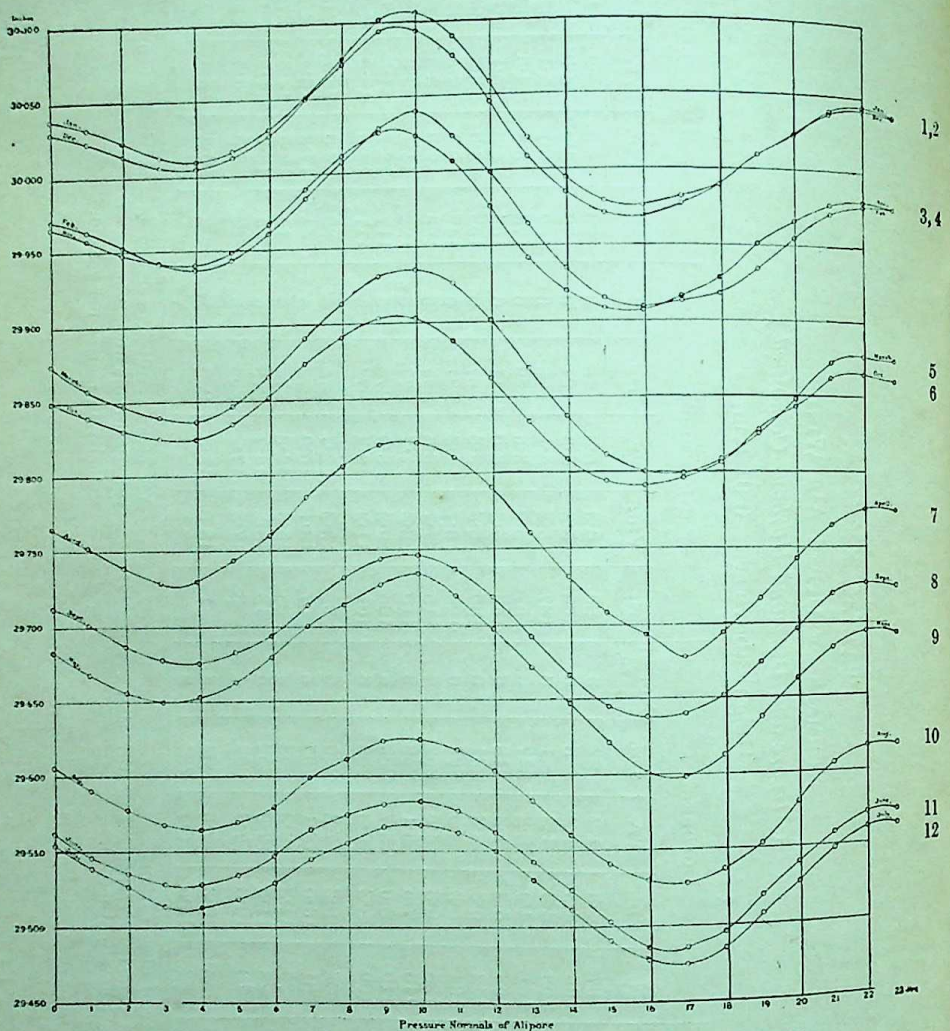

1=January	4=February	7=April	10=August
2=December	5=March	8=September	11=June
3=November	6=October	9=May	12=July

FIG. 2.—PRESSURE NORMALS OF ALIPORE.

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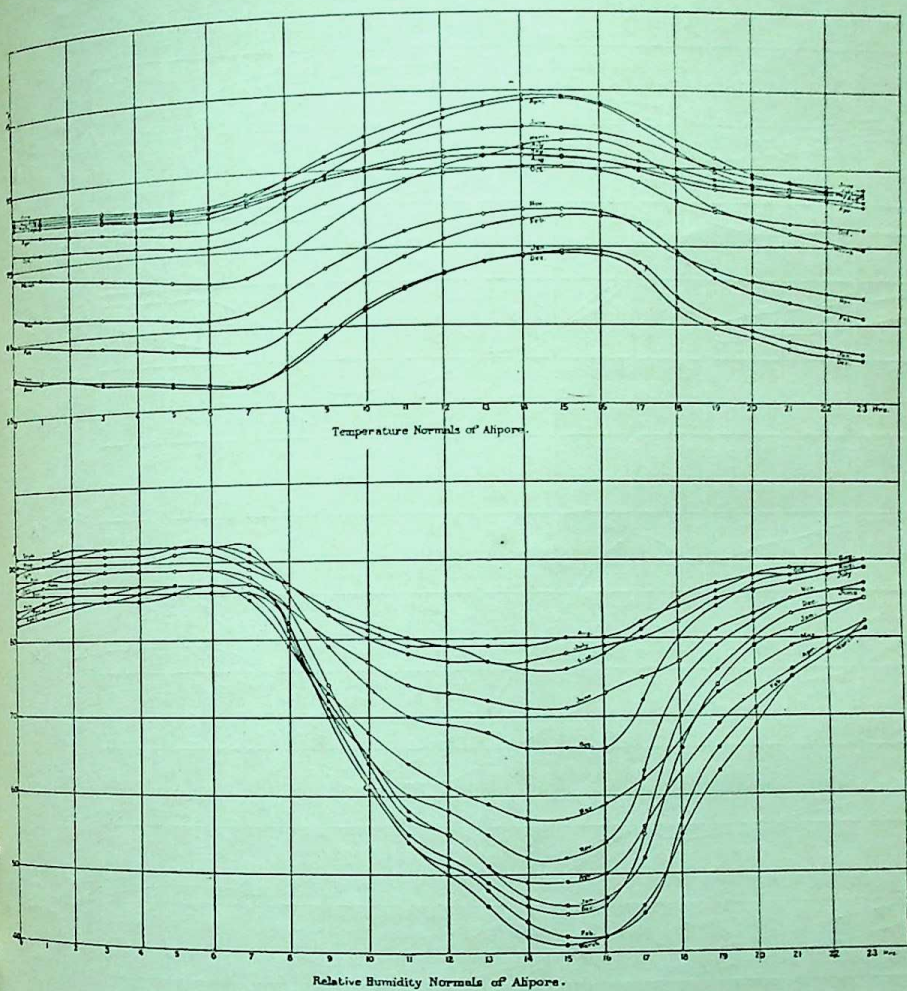

1=June	4=August	7=October	10=February
2=July	5=September	8=March	11=January
3=May	6=April	9=November	12=December

TEMPERATURE NORMALS OF ALIPORE.

1=September	4=July	7=December	10=March
2=October	5=November	8=January	11=February
3=August	6=June	9=May	12=April

FIG. 3.—RELATIVE HUMIDITY NORMALS OF ALIPORE.

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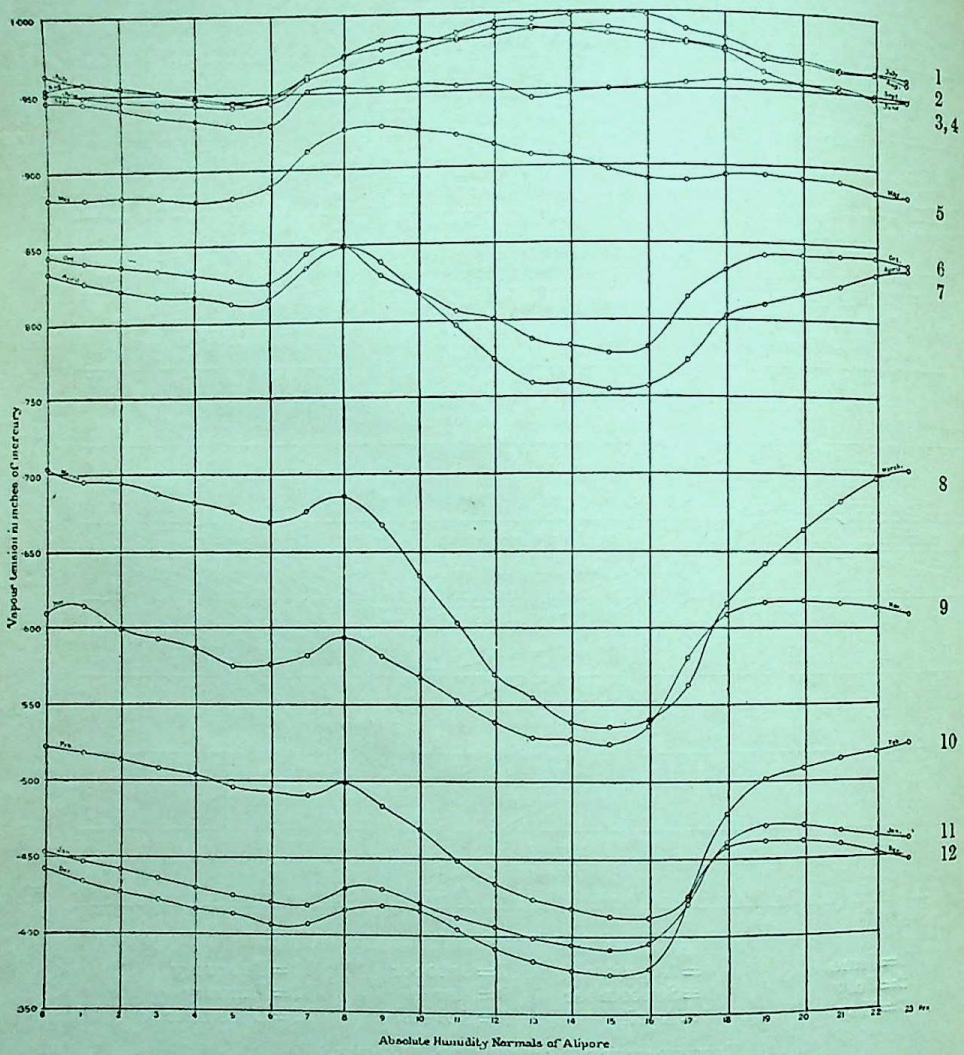

1=July	4=June	7=April	10=February
2=August	5=May	8=March	11=January
3=September	6=October	9=November	12=December

FIG. 4.—ABSOLUTE HUMIDITY NORMALS OF ALIPORE.

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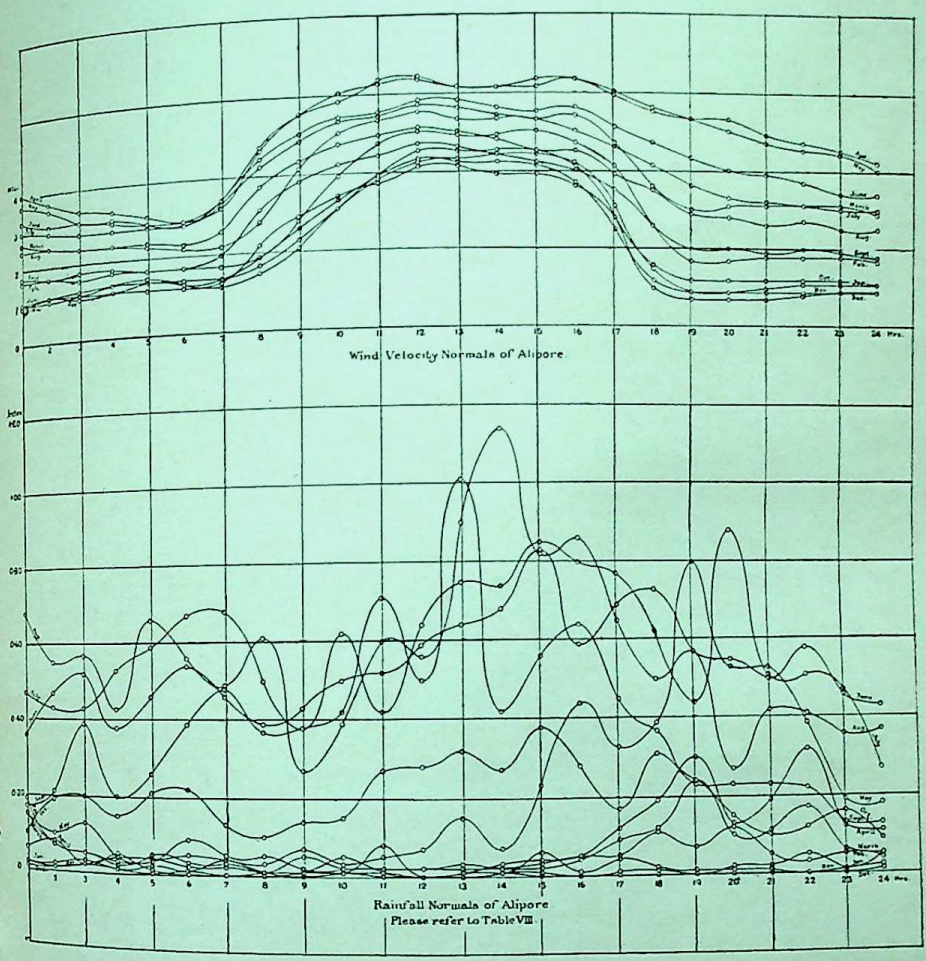

1=April	4=July	7=September	10=January
2=May	5=March	8=February	11=November
3=June	6=August	9=October	12=December

WIND VELOCITY NORMALS OF ALIPORE.

1=June	4=May	7=October	10=February
2=August	5=September	8=March	11=November
3=July	6=April	9=January	12=December

FIG. 5.—RAINFALL NORMALS OF ALIPORE.

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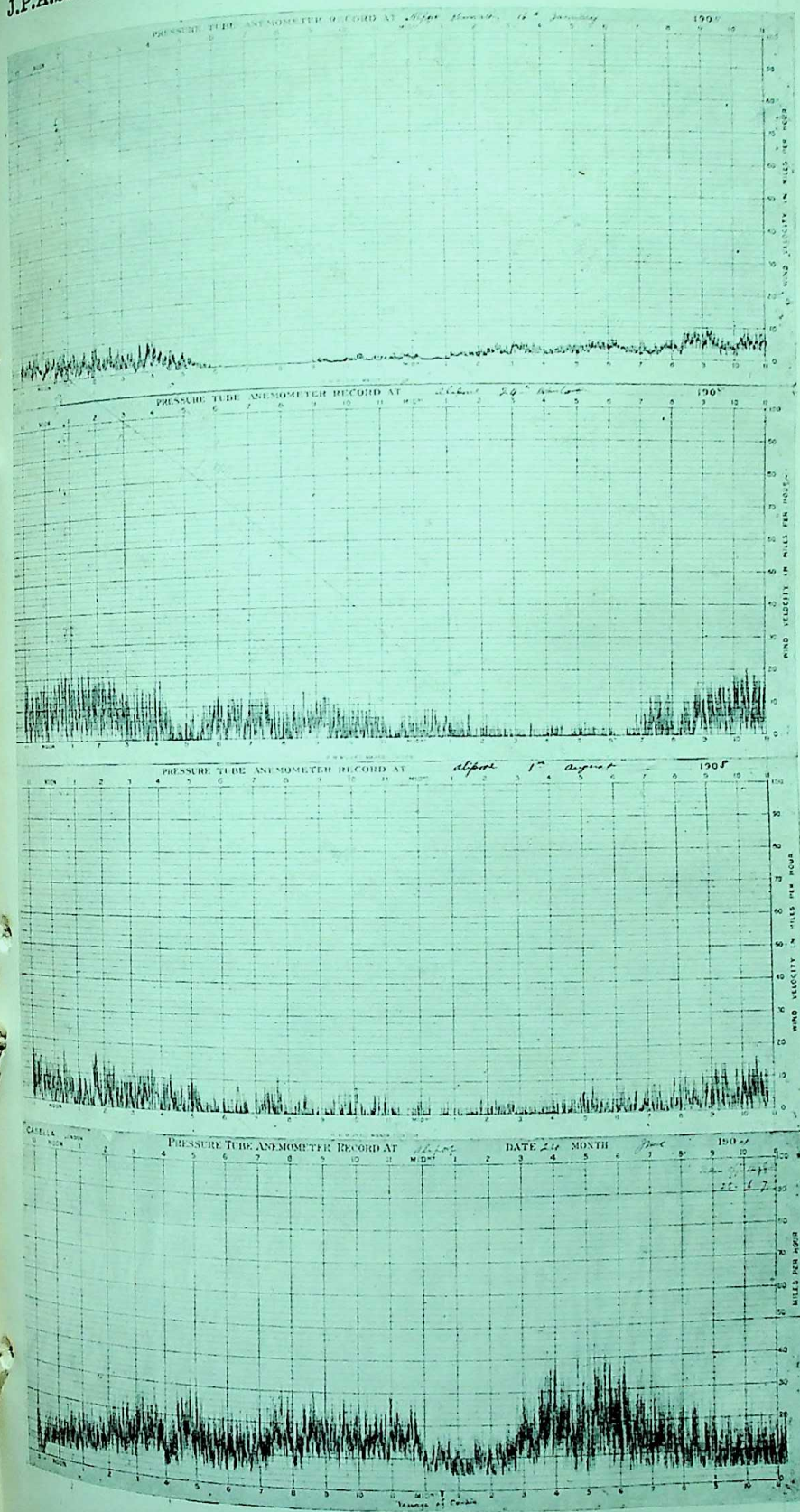

Winter

Hot weather

Monsoon

Storm

Typical Anemograms of Alipore.

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Ancient Monoliths of North Cachar.

By J. P. Mills and J. H. Hutton.

In January 1928 the first-named of the two writers of this article, when touring in the North Cachar Hills in Assam in pursuance of his official duties, happened to notice by the path near the village of Ndunglo and in the neighbourhood of a pair of linked tanks two unusual stones (Plate 17, Figs. 1 and 2.). These, on investigation, he found to be pear-shaped monoliths artificially dressed and each containing a cavity hollowed in the bulbous end. They were recumbent, but appeared at one time to have stood erect on their narrow ends. This discovery led him to enquiries and to a knowledge of the existence of a collection of similar stones at Bolasan, which he promptly visited and examined (Plates 20, Fig. 3; 22; and 23, Fig. 1.). With him at the time was Mr. W. H. Calvert, officer in charge of the Subdivision, who reported in April groups of more or less similar stones at Derebora, Kobak, and Kartong. These three groups, like the monoliths at Ndunglo and Bolasan are all on the west of the North Cachar Hills and near the boundary of the Jaintia Hills, and after having been visited by the first of us were visited and very carefully examined by both of us together in October 1928. No previous record of the discovery of these stones appears to exist at all. The second of us remembers to have heard a former Subdivisional Officer of the North Cachar Hills state that there were some queer monoliths near Derebora, and as the bridle path runs through this group, some stones of which have been actually cut down, *horrescimus referentes*, so that the path passes over their visible tops, its existence must have been known to a number of successive officers. It seems clear, however, that none of these groups had ever been reported in print. Since our visit the four most important groups have been gazetted as ancient monuments, and it is hoped that they may now succeed in surviving. The purpose of this article is to give a brief description of the five main groups and of some attendant features with some considerations as to their origin. How many more such relics still lie buried, in the jungle in these remote hills we cannot guess.

The monoliths dealt with fall into two distinct types, which may perhaps be divided into female and male. The former constitute the whole of the large group at Kartong, and a smaller group between Kartong and Kobak. Both these groups are extremely damaged. At Kartong, a Nepali grazier has been allowed to build his buffalo byres in the middle of the monoliths

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most of which are damaged, while earlier vandals had previously split some of them into fragments suitable for erection as a row of small rough stone menhirs (Plate 20, Fig. 1.). The Kartong monoliths occupy two knolls, but nearly every stone visible is damaged. Mr. Calvert estimated the number of monoliths there as about 50. They are the shape of a truncated cone, the flat base of which is less circular than elliptical, and they are hollow inside, the opening being at the small end and having a few suggestive lines cut towards the top. A smallish complete stone measured 3 ft. in height and had a circumference at the base of 7 ft., the longer diameter being 2 ft. 7 inches and the shorter 1 ft. 7 inches. The circumference at the top was 3 ft. (Plates 18 and 19.). A larger specimen, much broken, had an approximate height of 4 ft. 8 inches and the base diameters were 3 ft. and 2 ft. 2 inches respectively. The second group of these stones is on a knoll between Kartong and Kobak, some five miles from the Kartong group. Only a few stones are to be found and all much damaged. They are in proximity to a pair of cairns but otherwise resemble precisely the monoliths at Kartong.

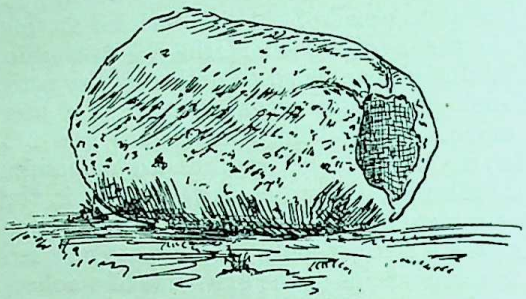

Fig. 1. Monolith at Kartong.

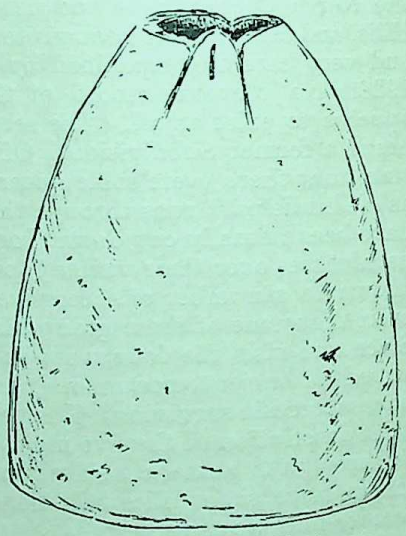

Fig. 2. Monolith at Kartong.

As in the case of two groups already referred to that at Kobak is on a hill top. The stones on this site belong to the male type but are not really pear-shaped, the top of the stone being conical rather than bulbous. The site seems to be of great age, since the stones are buried in the ground up to their greatest circumference, which is probably a good deal deeper than when they were set up. One stone, lying on the surface, was

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about 7 ft. long and approached the cylindrical much more nearly than the pear-shaped stones of Bolasan (Plate 21.). Most of these Kobak stones were incised with two bands round the top crossed by oblique lines chevron-wise and in between these bands were rough carvings; one had a pair of pigs and another a row of human heads resembling those depicted by Nagas for the heads of foes decapitated. All, however, were very much worn and there are probably a number of these monoliths entirely buried out of site. One monolith at least of this group had been broken up to make grave stones for the Christian village of Kobak.

Fig. 3. Human figure on one of the small Kartong monoliths made from a hollow monolith split up.

These Kobak stones are, except for the carving, which is absent at Bolasan, identical in type with a small group at Bolasan separated from the others and apparently older than the main group (Plate 22, Fig. 1.). One of these lying exposed measured 5 ft. 8 inches in length and another standing vertically, but with half the top split away, measured 3 ft. 8 inches across the section at the bottom of the hollowed portion. The rest of the Bolasan stones are of the typical "pear" shape—bulbous, not quite flat

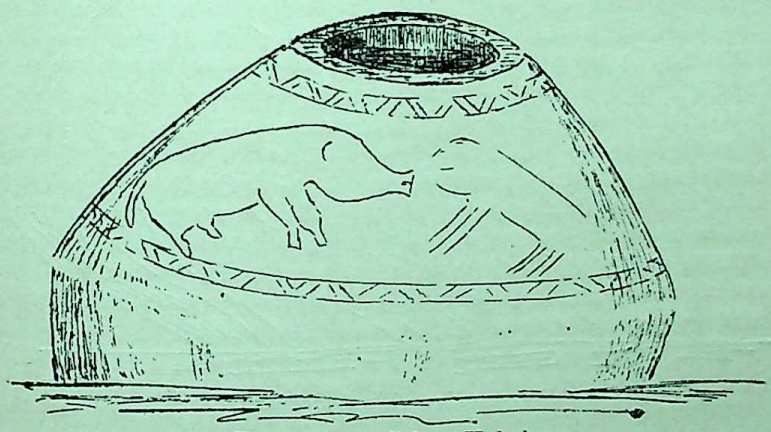

Fig. 4. Monolith at Kobak.

across the top, but convex from the greatest circumference to the apex where the hole is. They are arranged in long lines, the big stones of the alignment often apparently having clusters

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of smaller ones about them, rather as if the stones had stood, each group in front of a house, down long village streets just as in Ao villages, somewhat similar wooden posts are to be seen in front of houses on the street. Only in the latter case it is not

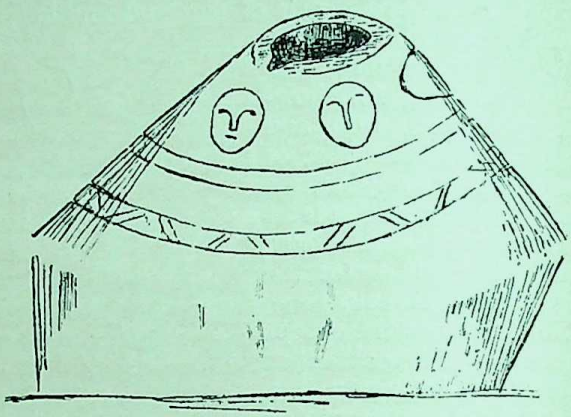

Fig. 5. Monolith at Kobak.

each house but occasional houses that have them and the stones at Bolasan are probably too close and too numerous to have stood in front of houses in this way (see Pls. 20, Fig. 3; and 23, Fig. 1.). We counted 400 in the group and some of the smaller

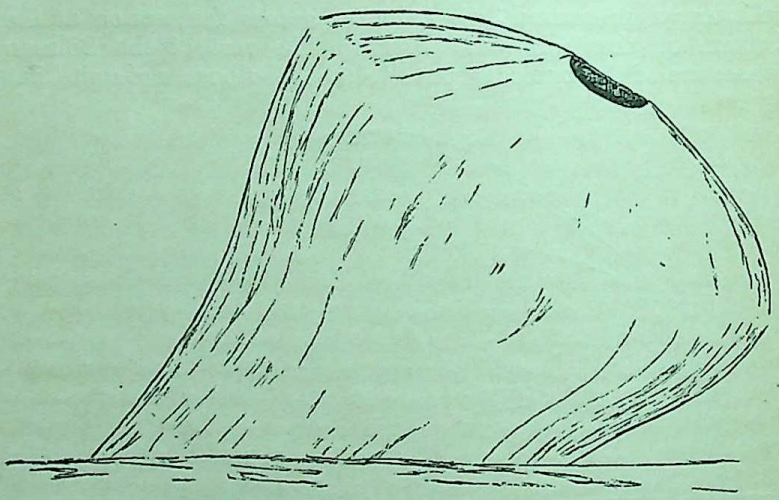

Fig. 6. Monolith at Bolasan.

of these were lying almost embedded in the ground, but generally speaking there has been little or no accretion of soil here and the monoliths have probably suffered much from annual burnings of the coarse grass which surrounds them

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(Plate 22). One of the largest stones, with an almost flat top, measured 6 ft. 2 inches across the diameter of the top and another, less flat perhaps, two inches more. One of the big ones which was lying out of the ground on its side measured 6 ft. in

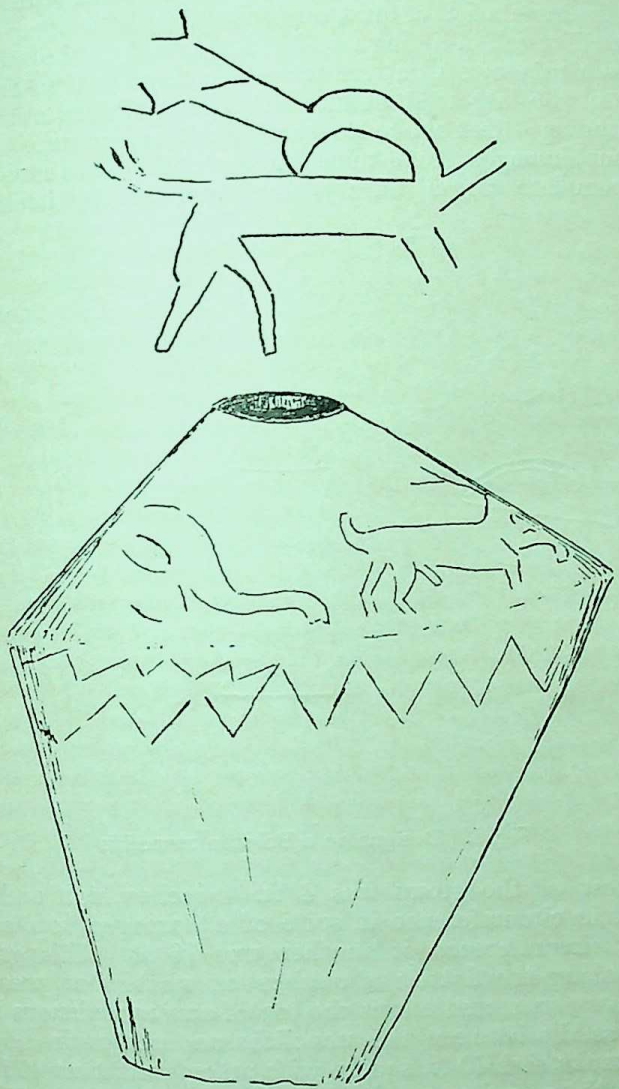

Fig. 7. Monolith at Bolasan.

height and had a hole 10 inches in diameter and two feet deep. A small one measured 2 ft. 3 inches in height with a greatest circumference of 4 ft. 6 inches and a hole 5 inches deep. The smallest we could find measured 1 ft. 4 inches high, 1 ft. 2 inches

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in greatest diameter, and 3 ft. 10½ inches in its greatest circumference, and had a hole 3 inches across and 8 inches deep (Plate 24, Fig. 1.). It was covered with rough carvings at the top consisting of a line or two of dog-tooth indentation pattern and deer and what was perhaps an elephant, while the other small stone referred to had representation of orbs, no doubt those of heaven, of a sort of covered vessel, of a long two-handed sword, and of what was perhaps a rainbow, a pattern which also appeared to be incised on one of the largest stone measuring 76 inches across the face and standing 4 feet above the surface of the ground. Another large but damaged stone must have stood 5 ft. above ground when complete, and a solitary stone standing by itself to het

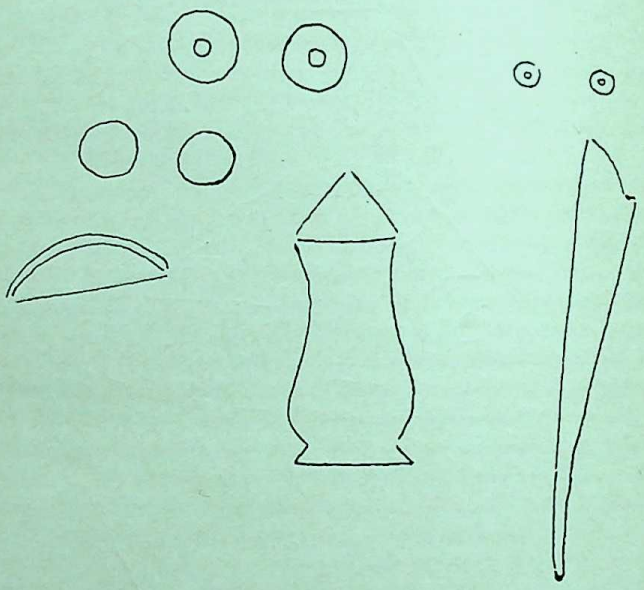

Fig. 8. Designs on a Bolasan monolith.

north-west of the group was 4 ft. 4 inches high and 15 ft. 3 inches in circumference in spite of a damaged top, and the greatest circumference of another was 16 ft. This group is spread along the flattish shoulders of what is at present an open grassy spur, and not at the top of any conspicuous height. On the saddle between the monoliths and the main ridge is a pair of tanks each 40 ft. square with an embankment 10 ft. wide between them, and an artificial mound close by (Plate 25.).

The Derebora monoliths are to the north-east of the groups already mentioned, and are perhaps the most ancient of the male type. Any how they differ from those of Kobak and still more from those of Bolasan in having very large cavities in the tops (Plates 24, Fig. 2; and 26). They must be very ancient as they are well sunk in the ground, at least one being so

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deep that the bridle path has gone across the top of it, the edges of the cavity having been cut down to level the path (Plate 23, Fig. 2.). This site is among trees, which could account for additional earth formation, the others being in open country and Bolasan in particular on poor thin soil growing grass which is burnt annually. The Derebora group appears to

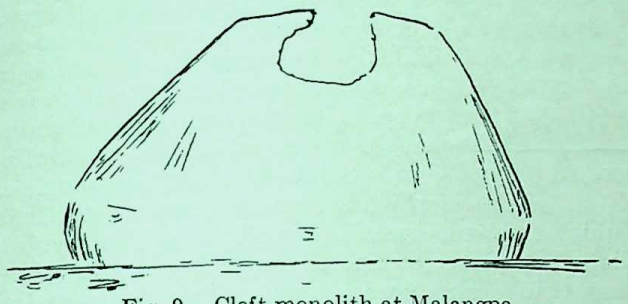
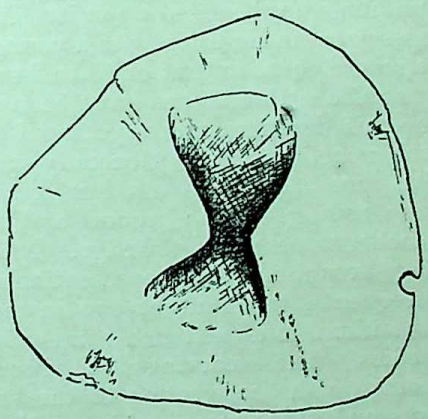


Fig. 9. Cleft monolith at Malangpa.
(*a*) from the side.

consist of 42 stones arranged in parallel lines, with one much bigger monolith at a distance from the rest (Plate 27.). One stone measured 16 ft. in circumference, another 17 ft. 8 inches, with a diameter of 1 ft. 8 inches across its opening. The solitary big stone measured 23 ft. 7 inches round its greatest circumference and the depth of the cavity hollowed out in it is 5 ft. 3 inches, while from the lip of this cavity to the circumference was 4 ft., the mean diameter of the aperture being 1 ft. 11 inches. Near by are the remains of a tank and what appears to have been a "dissolith" consisting of a small menhir and a flat stone at its base.



(*b*) from above.

Before it is possible to arrive at a conclusion as to the origin and purpose of these remarkable monoliths, it is necessary to examine shortly certain concomitant features of the neighbourhood, for the monuments described are not the only monolithic survivals of this area. At Malangpa, where there are a few of the pear-shaped monoliths in bad preservation, there is one of a slightly different type, having a cleft top, while one of the others seems to have been deliberately broken to make

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into a round sitting-stone of a type described below. At Malangpa, again, are twin tanks as at Bolasan, while further on towards Kartong are more twin tanks and a knoll with a hollow at the top and what appeared to be the remains of a circle of small stones with a single menhir outside it. The situation of the stones in the hollow top of the knoll is very suggestive indeed of the Jaintia Hills.[1] Between Malangpa and Kartong are several menhirs of a rather unusual type, being flat on one side and rounded on the other, rather the shape of a cricket bat. Some of them bear rough carvings which are not necessarily of the date of the menhir's erection, one of crude elephants, another of female genitalia. The latter, which is one of three in close proximity, has twin tanks close by and single tanks are scattered all about the ridge. Between Kartong and Waichong, again, there appears to have been a row of these cricket-bat menhirs, all now fallen and broken, in association with sitting stones such as those described below. Two of these fallen menhirs are incised with a conventional human figure much like that on a monolith of the ordinary flat type near Kartong, and suggestive of the typical Nzemi (Kachha Naga) representation of a man[2] (See Plate 17, Fig. 3). One of these also bears a mithun's head incised upon it. The stones, near Malangpa, are associated in tradition with a young man named Lamlir of great strength equal to that of 10 to 24 men.

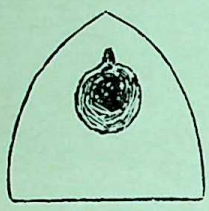

Fig. 10.

The sitting stones have been already referred to. Stones of this description are scattered all about the area in which the monoliths occur. Generally speaking they consist of a circular stone flat on the top but convex underneath, the convex side resting on the ground and the whole propped up with smaller stones round the edge. A few of these stones bear carvings—rough incisions representing in outline, human foot-prints (frequent), fish (one or two instances), a frog (one instance), a mithun (one instance) and what are probably heavenly bodies. These carvings are, of course, not necessarily contemporary with the erection of the stones, and the one of a frog was on a stone just outside the Naga village of Ginare. These round sitting stones, however, are of a type that belongs definitely to the Khasi and Jaintia Hills[3] and the carvings of

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[1] *vide* Journal Asiatic Society of Bengal, *Megalithic work in the Jaintia Hills*, Vol. XXII, 1926, p. 334.

[2] *vide* Mem., A.S.B., XI, *Tours in Unadministered Area East of the Naga Hills*, pl. 2, fig. 9.

[3] *See* Journ. Asiat. Soc. of Bengal, 1844. *Notes on the Kasia Hills, and People* (Yule).

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fish and frog suggest the Synteng clans which claim an origin from these animals. The mithun, on the other hand, would seem

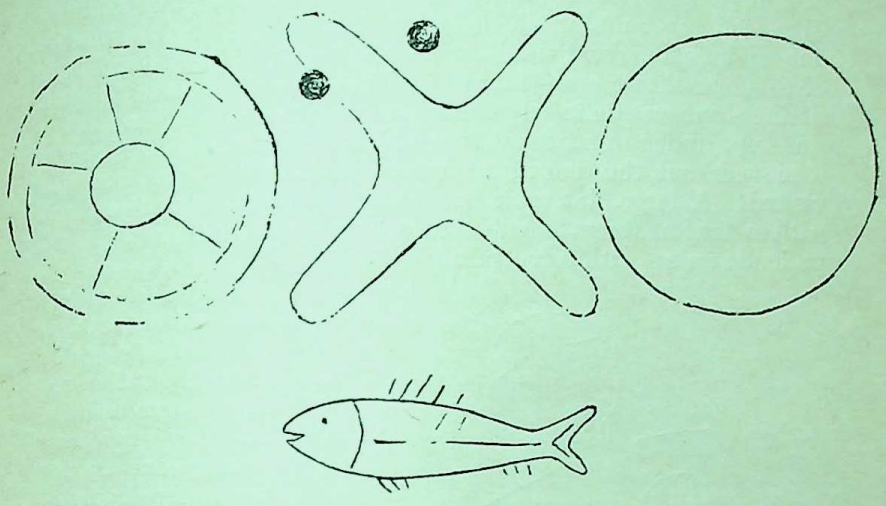

Fig. 11. Designs on sitting stones.

to belong to a later culture. Wild mithun (*gaur*) still frequent the neighbourhood and used to abound there, indeed we were

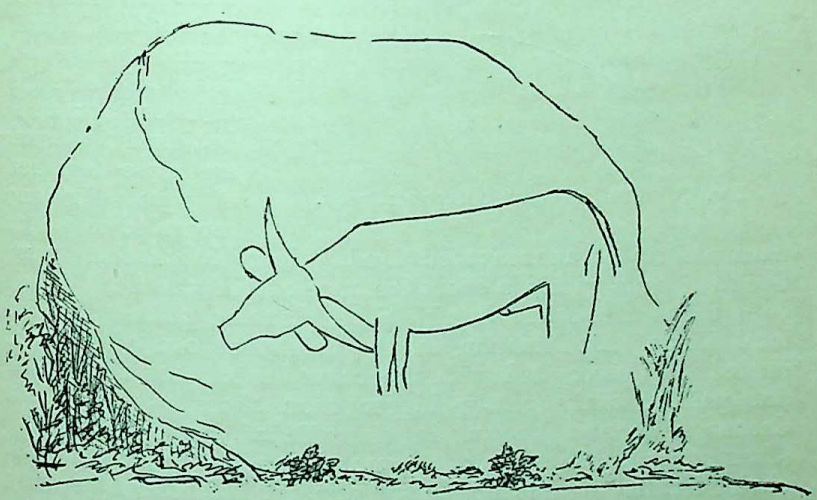

Fig. 12. The mithun rock.

so close to a herd in the long grass one day that we could smell them, but the carved mithun on the sitting stone mentioned and

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another on a smooth outcrop of rock between Kartong and Kobak are unmistakeably the domesticated variety (*gayal*), an animal which is not kept by the Khasi and which is typical of Kuki culture, though it has in most part of the Naga country displaced the buffalo, which latter animal, however, is still the one mainly kept and used for sacrificial purposes by the Nagas of this monolithic area (Pltea 17, Fig. 4.). In one case a round sitting stone was definitely connected with a long iron dao which was kept under an adjacent tree and caused storms and sickness if moved, but the dao could not be found when the spot was visited. A large flat rock was found beside the path incised with a fragmentary female figure—the head and breasts and pudenda; also with a footprint.

Fig. 13. Designs on an outcrop of rock.

Single tanks are met with at frequent intervals throughout the area of the monoliths, but they may have been necessary for the water-supply of the people who lived on these far from well-watered ridges. The twin tanks, however, must have had some ceremonial significance, some of them are circular, more are square, but always the pair are close together, of equal size and separated only by a narrow strip of unexcavated land. Near Kobak there were five such pairs within a short distance of one another. These twin tanks are called *lamjol*, *i.e.*, 'dancing places,' by the local Kukis. At Dimapur, in the neighbourhood of, but not immediately associated with the carved monoliths there, is a fine pair of tanks vastly bigger than those of the North Cachar Hills and known as the 'Twin' or 'Pair Tanks' (*Jura-pukhri*). These pairs are probably all to be explained as having fertility significance on the principle, laid down by many of the Naga tribes, that a pair is the unit of nature, a principle followed in the erection of monoliths, in the appointment of village priests, and even by chiefs in founding new villages, the Sema chief always taking with him a friend to go with him "as

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it were man and wife," a practice which has given rise to dual chieftainships. The Khasis, it is to be noted, dig two shallow tanks at the ceremony of the collection of the remains of all the clan in a common burial place.

At Kalimkhu, an eminence near Kartong is the remains of a strong fort said locally to have been built for a Synteng chief named Sajar about five hundred years ("seven lives") ago.

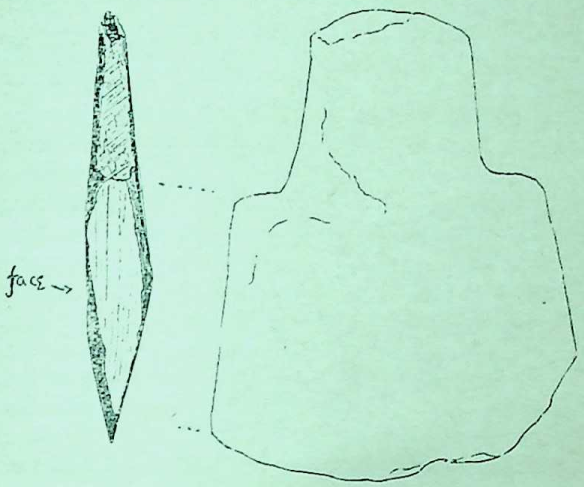
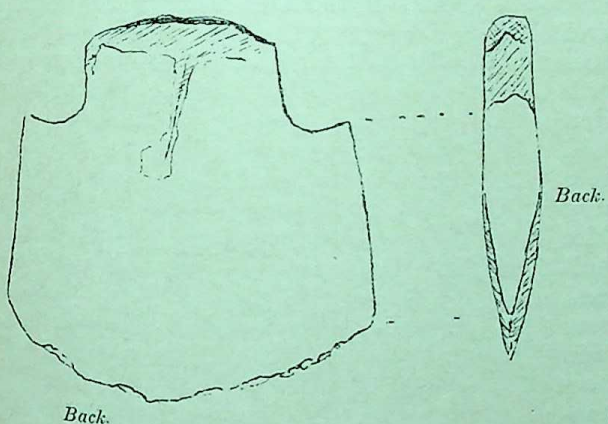


Fig. 14. (*a*) Stone celt from Ramji.

Throughout the area of these monoliths stone adze-heads are found, one type of which is very markedly shouldered (Pl. 20, Fig. 2.). These implements are in some cases so carefully shaped as to suggest that they have been derived from a metal original, suggesting the little curved and hollowed shouldered iron hoe used by the Yimtsung Naga tribe[1] or the smaller Khasi hoe which is used for sweet potato patches. The other type found is probably an axe rather than an adze and is flat and particularly triangular, differing much from the prevailing type



(*b*) Stone celt from Waichong.

[1] *V. The Sema Nagas*, Index I, *s. v. tafuchi.*

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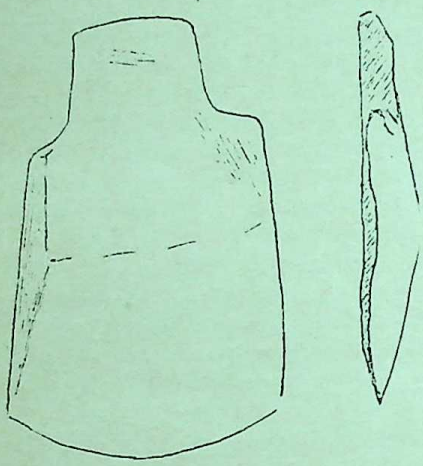
of stone implement found in the Naga Hills, which is thick and very roughly shouldered and nothing like so carefully finished as these North Cachar implements. Many of the latter stone implements now to be obtained from Nagas or Kukis have been scraped and otherwise damaged in order to use the scrapings as medicine.



(c) Stone celt from Kobak.

In Muchidui near Bolasan is the finest dolmen tomb we have yet seen in the hills of Assam. It is, however, recent and contains the mortal remains of one Heoding, whose son, a very old man still lives in the village.

It remains to consider who erected these monoliths, and for what purpose. The present inhabitants of the country are Nagas and old Kukis (Hrankol or Biete) and it is clear that the monoliths were not erected by them or their ancestors. Local tradition in some cases speaks of them as Mikir work, and in others as that of Khasis, but does not distinguish between one kind of monument and another. There is in favour of a Mikir origin the fact that the hollow monoliths and twin tanks appear to have a certain cultural connection with Dimapur, and that the Mikirs claim connection with the people who erected the Dimapur monoliths. The association with both the carved and hollowed monoliths and with the sitting stones of the long two handed iron dao might be either Khasi or Mikir, for both used the long iron dao in the past, as also did the Ao

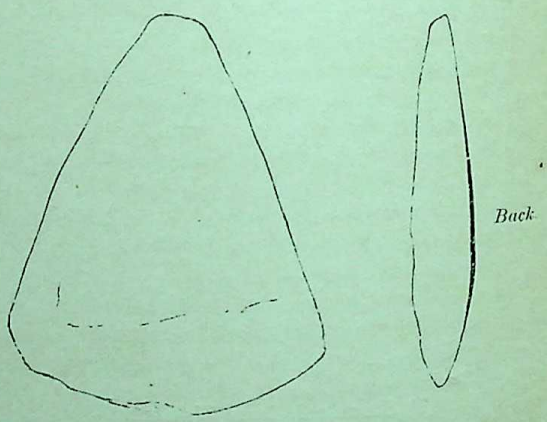


Fig. 15. Celt from Gunjong.

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Nagas, who attribute such daos to a previous race called Molungr and who also speak of bulbous wooden phallic posts set up outside their houses as *Molungsongsong*. It is probable, however, that these traditions among Nagas and Mikirs of a prehistoric culture of which phallic memorial posts and the two handed iron sword were typical, must be referred to some general culture which pervaded Assam before the influx of the Tibeto-Burman speaking tribes from the northeast or the Hindus from the southwest and which was very likely indeed a Mon-Khmer culture[1]. This, however, does not involve our regarding the existing tribes, all of mixed blood, probably, who have traditions of the existence of that culture, as the direct representatives of the people who put up the monoliths.

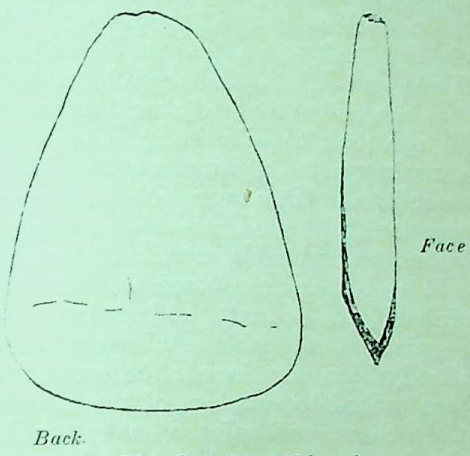

Fig. 16. Celt from Ndunglo.

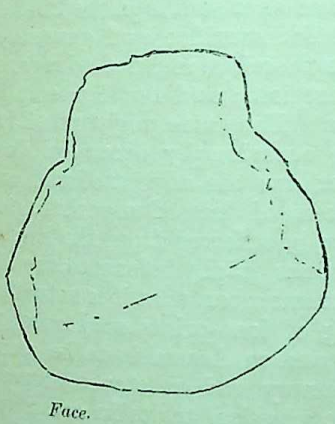

Fig. 17. Celt from Bolasan.

To turn to the Khasis, they or their near relatives the Syntengs, for "Khasi" is often used to describe both tribes, are very clearly connected with the round sitting stones. Constructions of this type, though not found everywhere in the Khasi Hills, as the rectangular dolmen type is the prevailing one, are recorded and depicted by Yule and mentioned by other observers[2]. The "cricket bat" monoliths, though distinctly

[1] It is perhaps a coincidence that the Konyak Naga village of Mon is known to the Assamese as Molung.

[2] Yule, *Notes on the Kasia Hills, and People*, Journ. Asiat. Soc. of Bengal, 1844, P. 612 *sqq.* and plate II

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suggestive of the flat carved monoliths at Kasomari[1], are likewise probably Khasi or Synteng, since they were found in close association with the sitting-stones. If the prevailing menhirs and dolmen stones of the Khasi and Jaintia Hills are of rough stone and irregular in shape, this discrepancy is perhaps to be ascribed to the fact that whereas the North Cachar Hills yields a soft stone easy to work, the prevailing stone in the Khasi and Jaintia Hills is a hard granite. The local tradition that the line of dressed standing and table stones along the path from Kobak to Waichong occupies a site that was formerly a market, not only suggests the similar tradition of the carved monoliths at Dimapur, but links up with the actual surviving practice in the Jaintia Hills, where among the rough stone monoliths and table stones at Nartiang a weekly market is still held as it has been since the time of the Jaintia princes and probably for at least the last five hundred years. The Synteng associations of fishes and frogs carved on sitting stones has already been mentioned; the same associations are probably to be attached to carvings of the heavenly bodies, representations of which are still pointed out in the Jaintia Hills. The carvings of mithun on the other hand seem antagonistic to any association with the Khasi or Syntengs. Mithun appear to be typical of the Kuki-Kachin culture, a late immigrant into Assam, and to have displaced the buffalo, which was till then, as it still is in parts of Assam Hills, e.g., the Konyak Naga country and the North Cachar Hills themselves, and as it still is in the Philippine Islands, the animal reserved for sacrifice and generally associated with ceremonial. We are therefore inclined to regard the carvings of mithun as later accretions, and not contemporary to the erection of the monoliths. The same might possibly apply to the human figures, which occasionally occur on the "cricket bat" menhirs. It was perhaps the advent of mithun keeping people that caused the makers of dressed monoliths to migrate. Head-hunting, if that is to be inferred from the heads round one of the Kobak hollowed stones, might belong to any of the tribes named, though we do not remember that it is actually recorded of the Mikirs. The carving of foot-prints on stones is a wide-spread Indo-Chinese custom, and in Assam is to be seen at Sangnyu in the Konyak Naga country and on stones carved by Manipuris, who have at any rate physical traits in common with the Syntengs as well as some cultural ones such as the marketing habit[2].

The particular purpose of the monoliths is a more difficult question. The upright menhirs and the sitting stones must be

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[1] Journ. Royal Anthropological Institute, Vol. LIII (1923), *Carved Monoliths at Jamuguri in Assam.*

[2] *Vide* Journ. Asiat. Soc. of Bengal, *Some Megalithic work in the Jaintia Hills,* Vol. XXII, 1926, No. 6, P. 335.

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interpreted in the light of Khasi, Synteng and Naga monoliths and dolmens as providing phallic memorials through which the soul matter of the living or of the dead assists the fertilization of nature, the upright stone representing the male and the flat ones the female principle. No doubt the hollowed stones are to be referred to the same general principle, but the toil and care with which they are hollowed, sometimes to such an extent that the stone rings on being struck, suggests that these hollows were made for some very definite purpose. Here we are reduced to speculation. Many of them actually held water when we saw them and it would be reasonable enough to suggest that by constructing them to hold water the makers hoped to promote the rainfall, much in the same sort of way as a Rengma Naga digs a hollow on his father's grave in order that it may fill with rain and cause a good monsoon and abundant crops. Or, again they might have been made to contain offerings, given to obtain specific benefits, and an analogy might be offered in the apparently recent or comparatively recent holes scooped out in ancient monoliths at Kasomari[1] seemingly for this purpose. Neither of these suggestions quite satisfies us. Many of the cavities in the Bolasan stones seem too small for the former purpose and many of those at Derebora unnecessarily large for the latter. The stones at Kartong strongly suggested to one of us the phallic skull cists of the Konyak Nagas of Wakching, Wanching and Kongan, but many of the monoliths at Bolasan have cavities too small to take a skull with any comfort, though those at Derebora are as capacious as the pots used for the skulls of Konyak Chiefs further north or for the skulls and bones of the dead placed in their granaries by the Nagas of Laruri. On the whole we have come to the tentative conclusion that the hollow monoliths of the North Cachar Hills contained the ashes of the dead. The burning of the dead is practised by the Mikirs, the Sakchips (Tipperas), Hrangkols, and other old Kuki tribes which probably represent a mixture of the earliest immigrants of the Kuki race with the people who occupied Assam before them. The Khasi and Synteng not only burn their dead, but at a periodic tribal festival collect the ashes of the tribal dead into a common burying place[2], where the remains of the men and of the women are disposed of apart in pots in a stone chamber. Further the War of Shella[3], a tribe belonging to the Khasi-Synteng group but regarded as in some measure distinctive in their customs, use as a preliminary depository for these ashes a hollow made in a wooden post, and our experience of the Naga Hills leads us to expect to find corresponding forms in

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[1] *Carved Monoliths at Jamuguri in Assam*, J.R.A.I., LIII, P. 154; *Some carved stones in the Dayang Valley, Sibsagar*, J.A.S.B., XX, 1924, No. 5, P. 146.

[2] Gurdon, *The Khasis*, pp. 134, 140 sqq.

[3] *ibid.*, p. 137.

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wood for monoliths in general. The custom of the Khasi and Synteng generally [1] is to collect the ashes of the dead temporarily in stone dolmen cists, transferring them later to the common cist of the family and thence to the clan burial place in a ceremony of much importance which is probably no longer performed. We suggest that the excavated monoliths of the North Cachar Hills served a purpose of this kind, in which case the great monolith separated from the group at Derebora no doubt held the ashes of the chiefly family or was perhaps the final destination of the ashes of the whole clan. It may be that the difficulty of excavating granite into similar forms led to the substitution of dolmen cists containing pots by the Khasis and Syntengs.[2]

In any case the North Cachar hollowed monoliths must represent a rather specialized development of a phallic ancestor cult typical of Assam, widely spread in South East Asia and extending even to Oceania and Madagascar. If we are to impute their erection to the ancestors of the Mikir tribe we must explain the disappearance of the custom as the result of racial invasion and upheaval which have left the Mikirs isolated in small communities and degenerate in cult. No Mikir community now-a-days is numerous enough to undertake the erection of any large monoliths. It is more probable, however, that this type of monolith is to be associated with the Khasi Synteng group of tribes and that it has disappeared owing to their migration into an unsuitable environment of untractable materials. In any case the cult appears in the North Cachar Hills fully developed, and we have no indication of its growth. A single stone, obviously of phallic significance and having a small hole at the top, has been found by Mr. Calvert in the extreme east of the Cachar Hills on the Manipur border, but it would be rash to infer a definite connection with the hollow monoliths. No doubt their prototypes were fashioned of wood and have therefore long since perished.

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[1] That is of the few that remain unconverted to Christianity. Ancient customs are vanishing very fast from the Khasia and Jaintia Hills.

[2] Since the above was written, Mr. Calvert has discovered at the bottom of the cavity of one of the Derebora monoliths a few fragments of thin mineralized bone suggestive of part of a skull. This forms a very strong confirmation of our theory associating these monoliths with the disposal of the dead.

With reference to these fragments Sir Arthur Keith, who very kindly examined them for us, writes as follows :—

"The bones you sent home are of one person and from the size of the fragments the individual may have been a woman or a small man. I think a woman. She had been cremated as you observed. No animal fragments are present. The hard mineralized condition is not due to the age or fossilization—just the hardness and mineralization which follows cremation"

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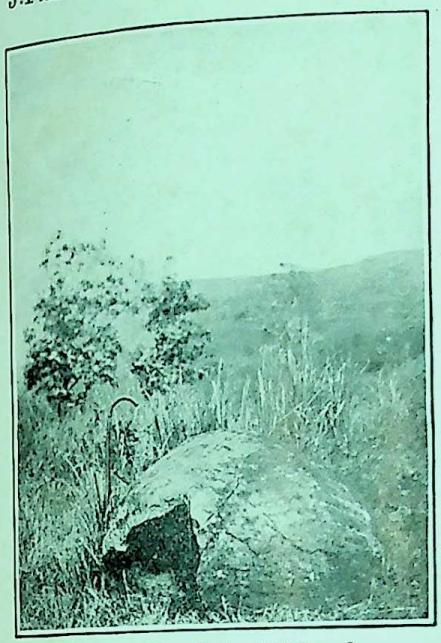

Fig. 1. Monolith at Ndunglo.

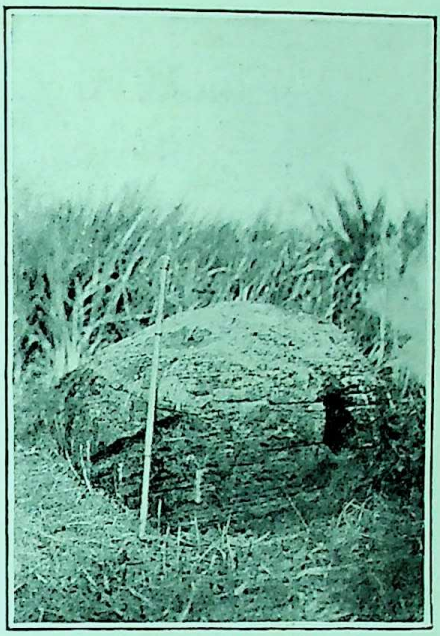

Fig. 2. Monolith at Ndunglo.

Fig. 3. "Bat" monolith carved with human figure between Kartong and Waichong.

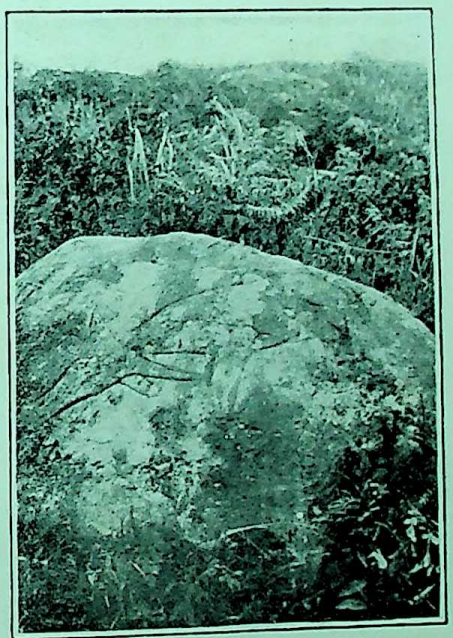

Fig. 4. The mithun rock between Kartong and Kobak.

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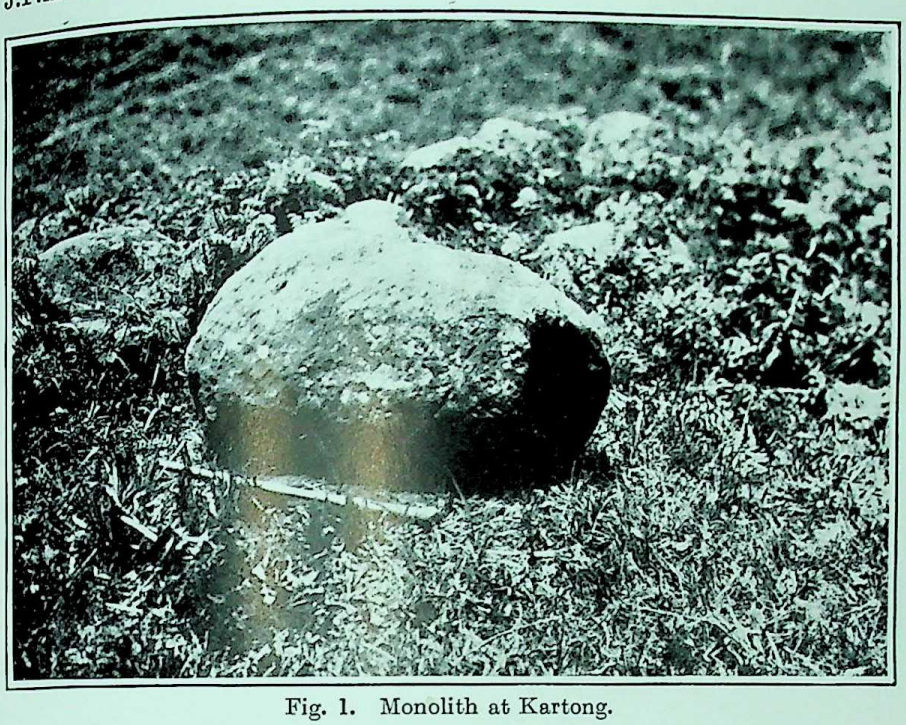

Fig. 1. Monolith at Kartong.

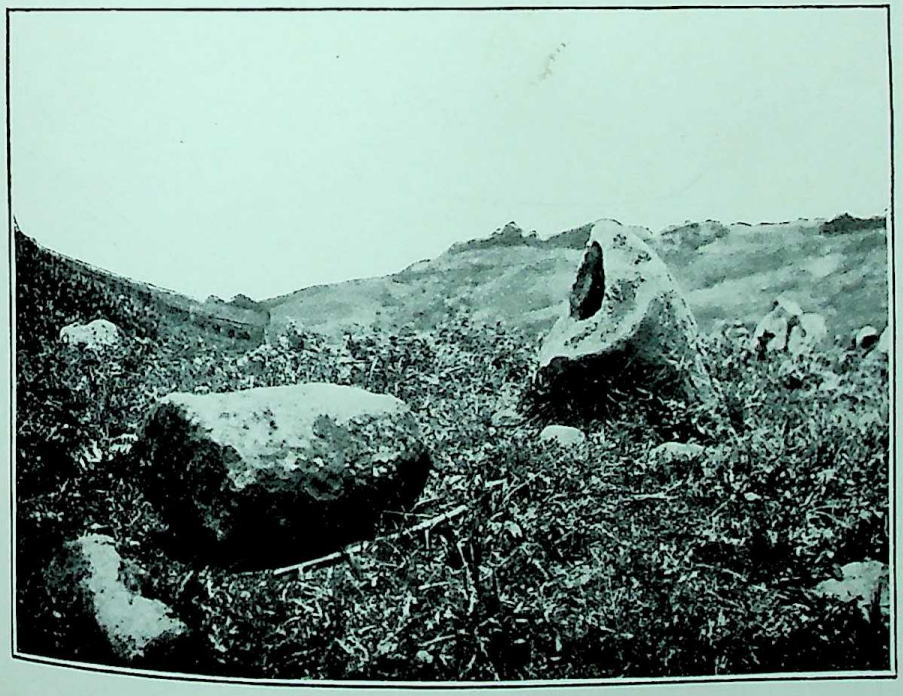

Fig. 2. Monolith at Kartong.

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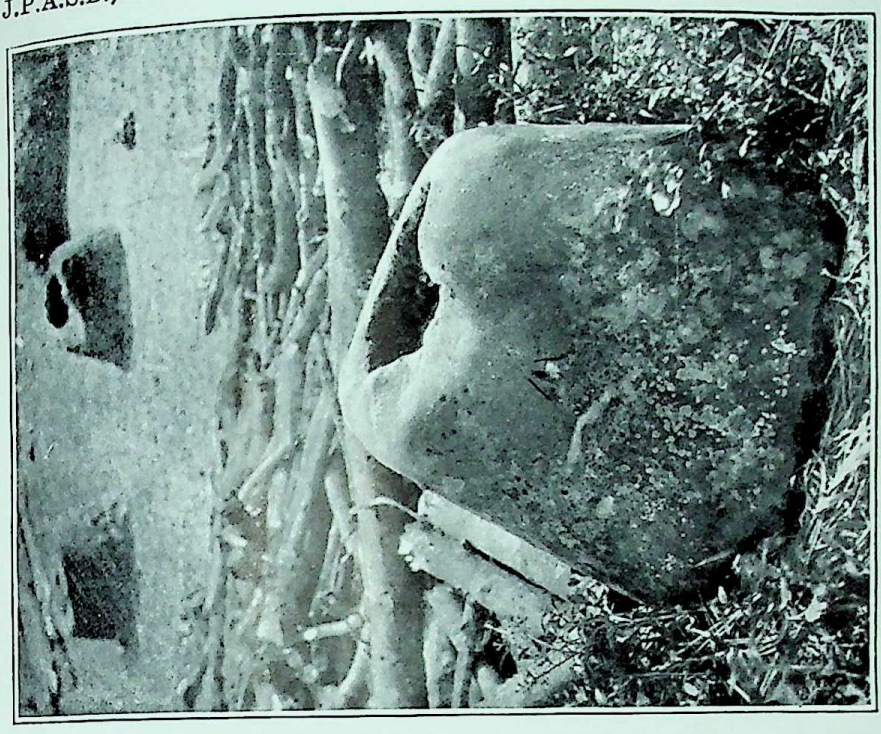

Fig. 2. Monoliths at Kartong.

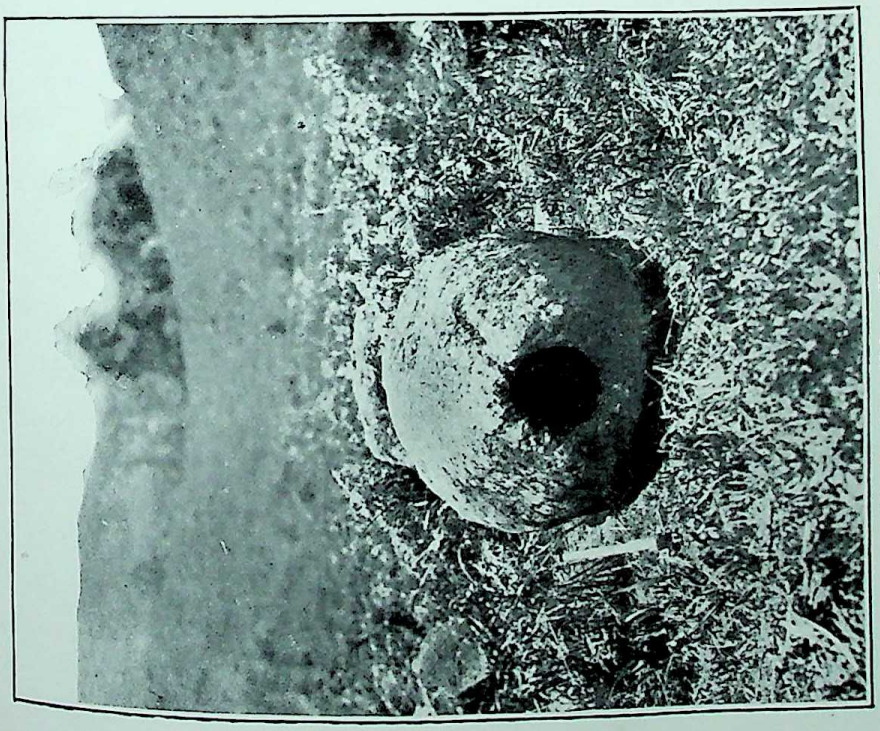

Fig. 1. Monolith at Kartong.

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Fig. 1. Small monoliths at Kartong made from fragments of more ancient hollowed monoliths.

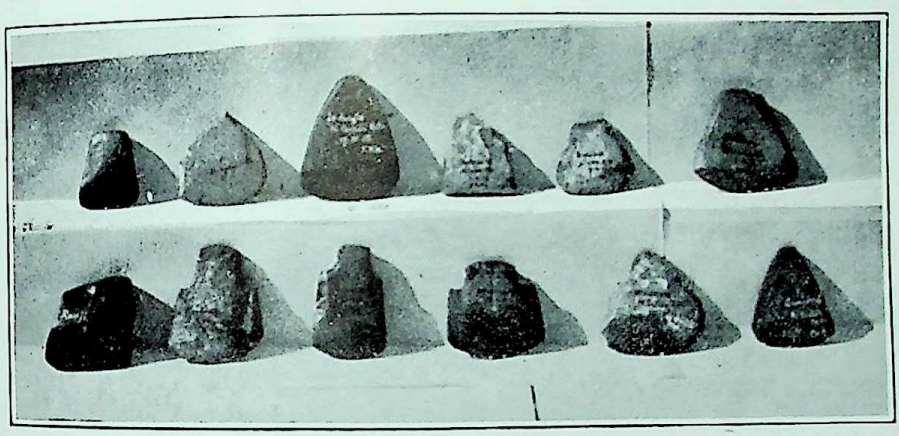

Fig. 2. Stone celts from the monolithic area.

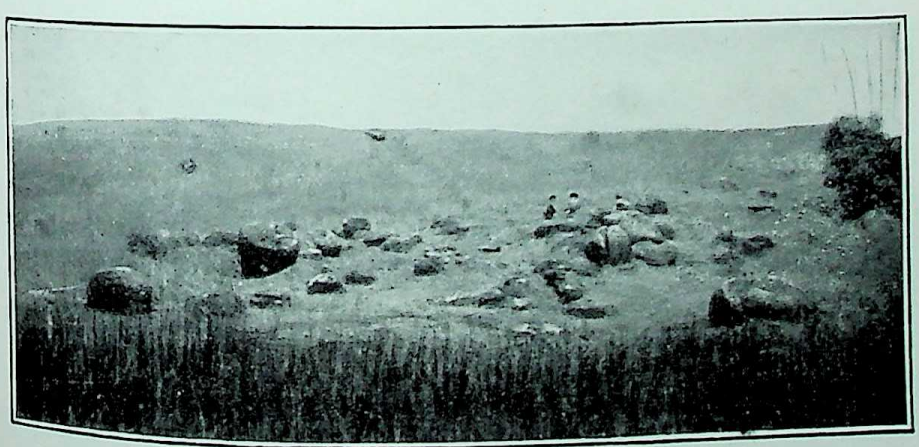

Fig. 3. Monoliths at Bolasan.

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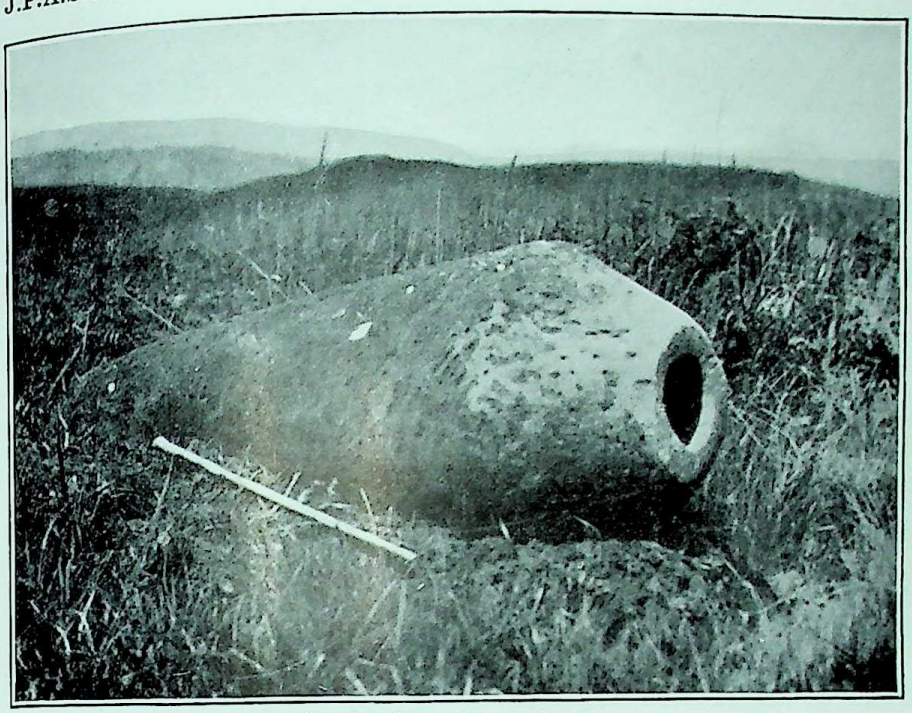

Fig. 1. Monolith at Kobak.

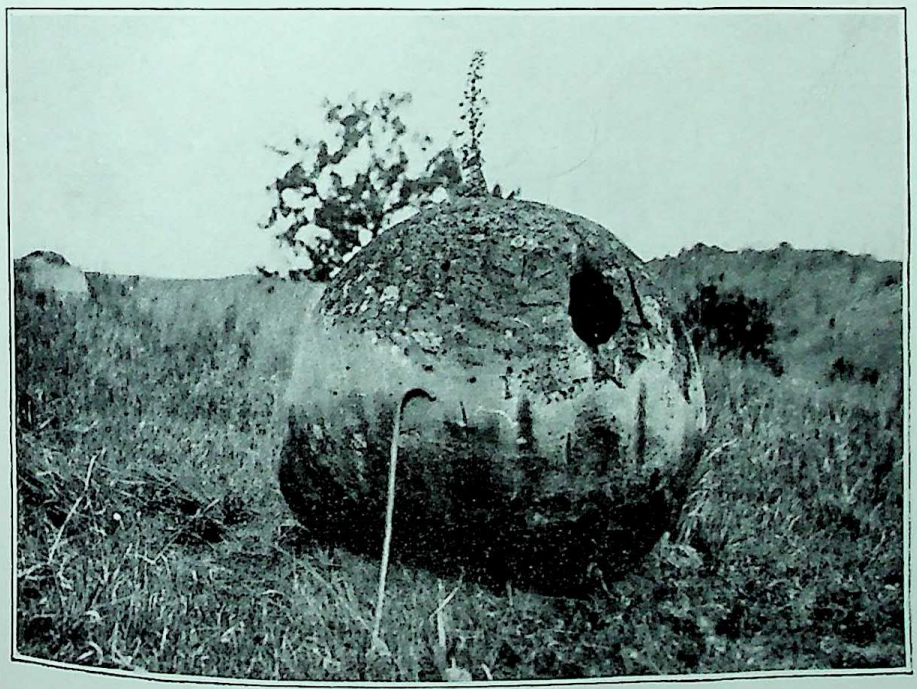

Fig. 2. Large monolith at Bolasan.

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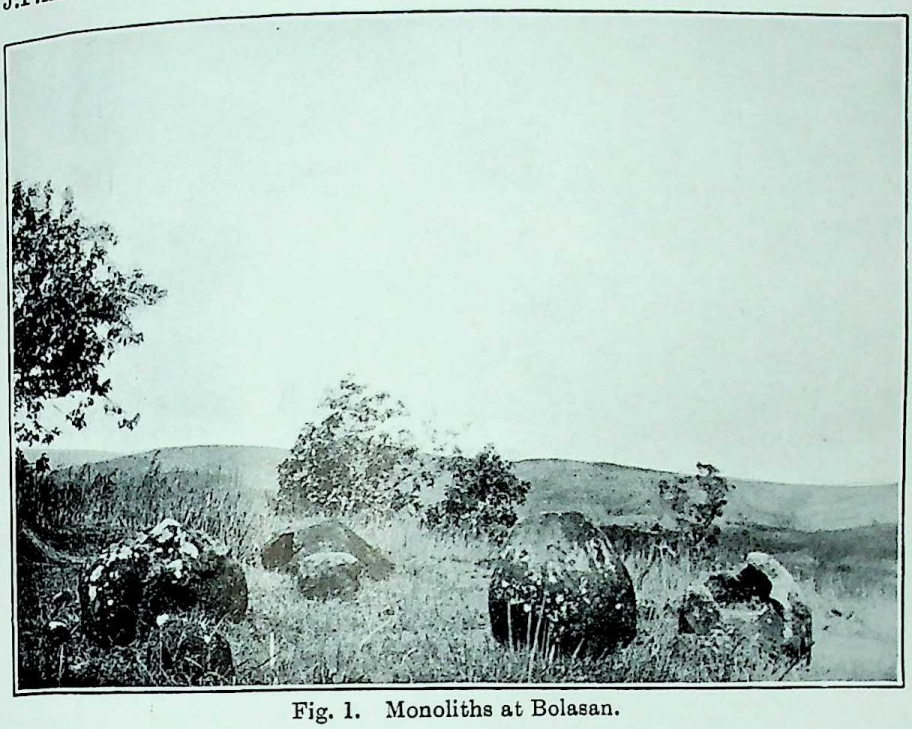

Fig. 1. Monoliths at Bolasan.

Fig. 2. Monoliths at Bolasan.

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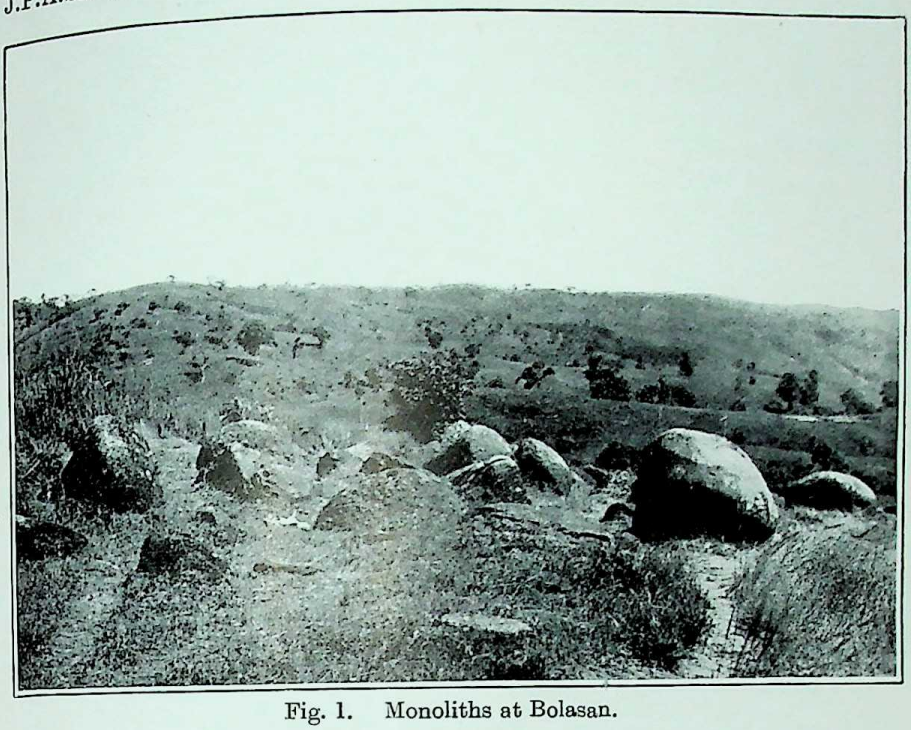

Fig. 1. Monoliths at Bolasan.

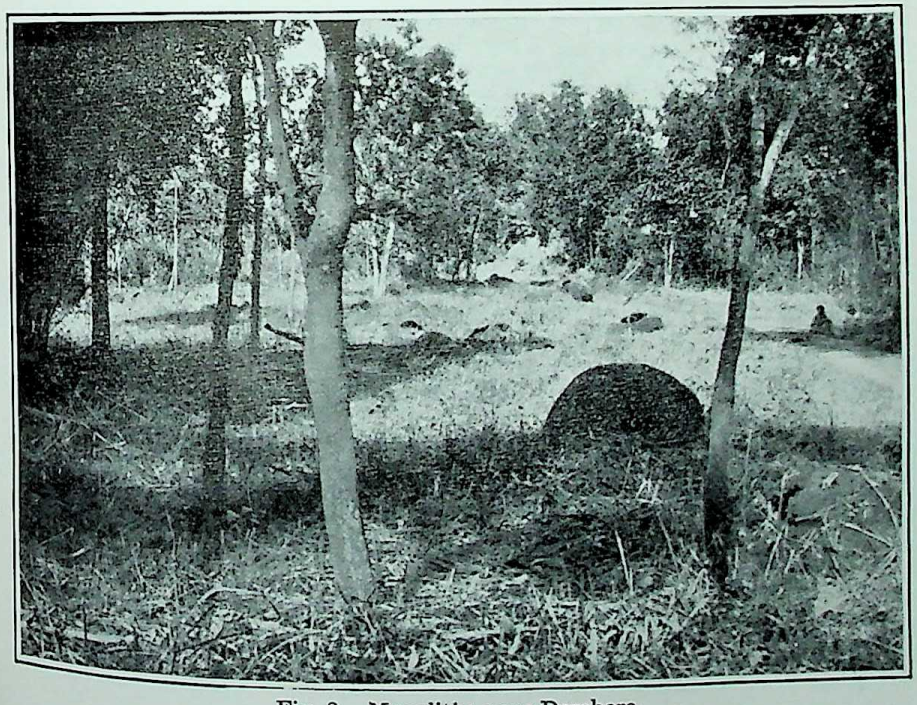

Fig. 2. Monoliths near Derebora.

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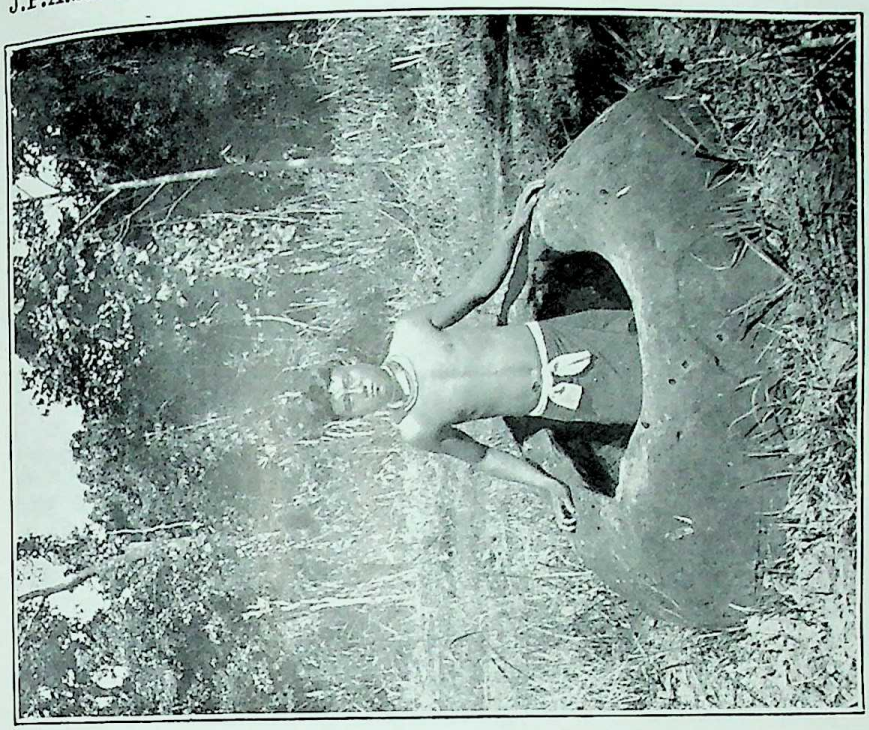

Fig. 2. Monolith near Derebora.

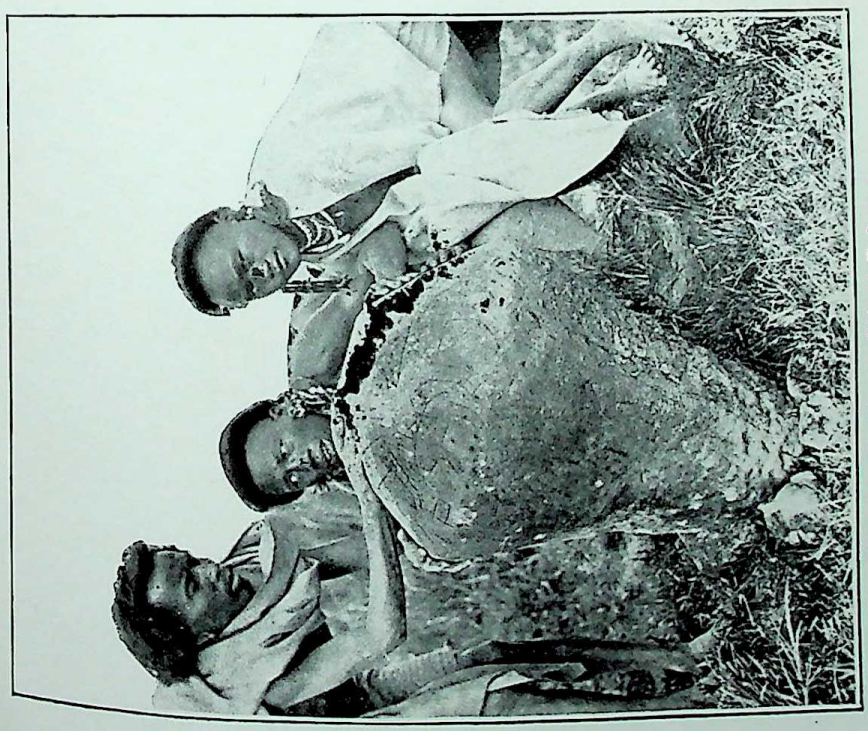

Fig. 1. Small monolith at Bolasan.

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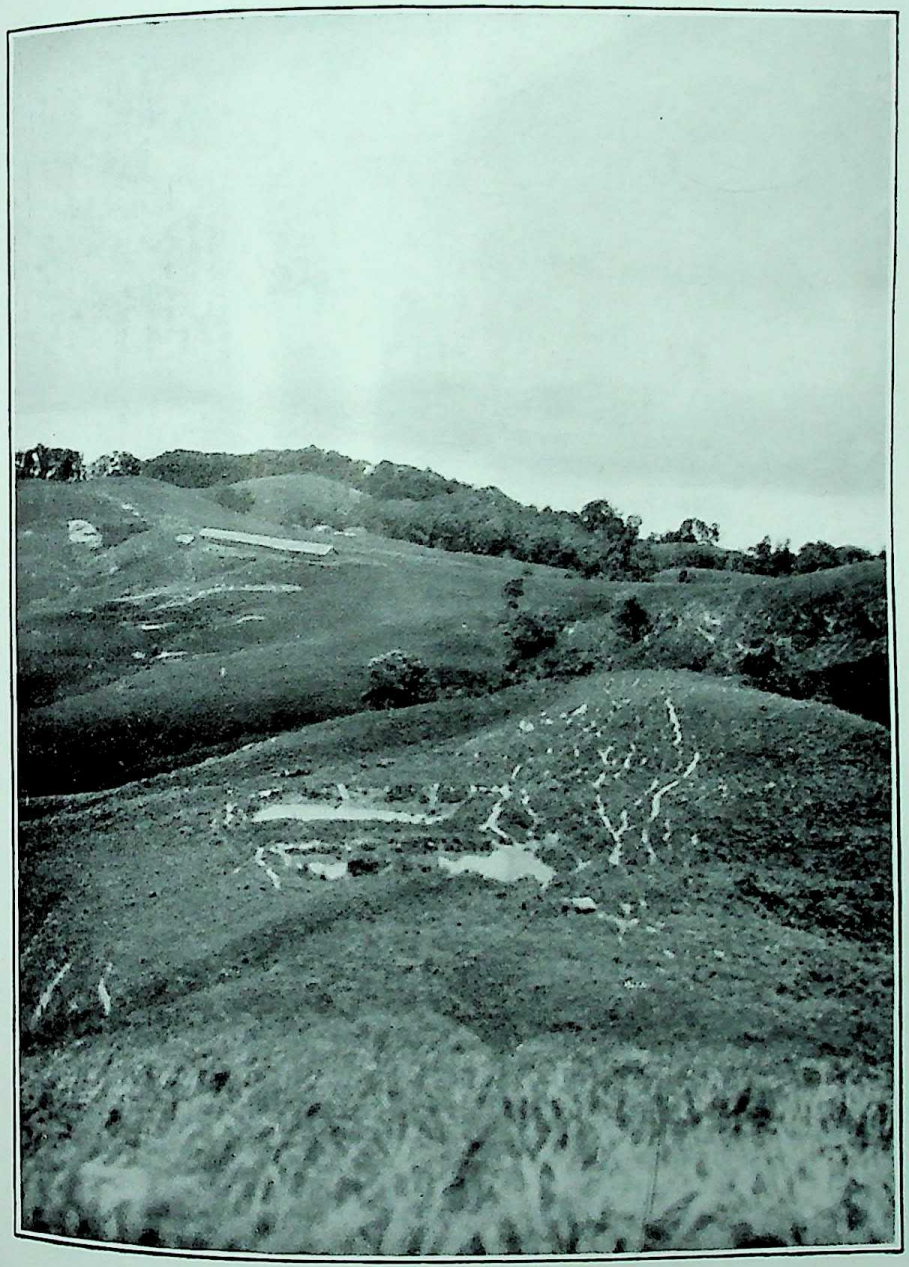

The twin tanks at Bolasan.

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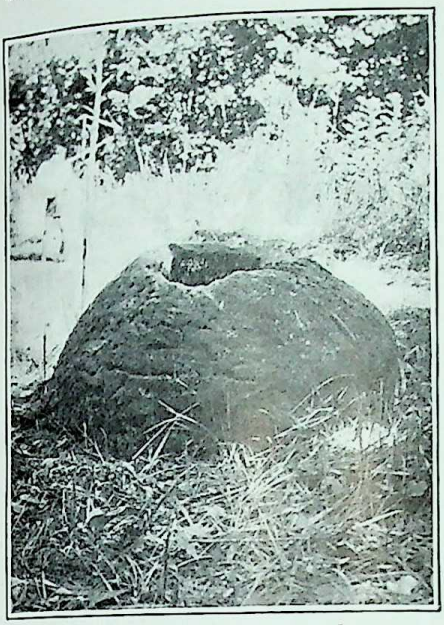

Fig. 1. Monolith near Derebora.

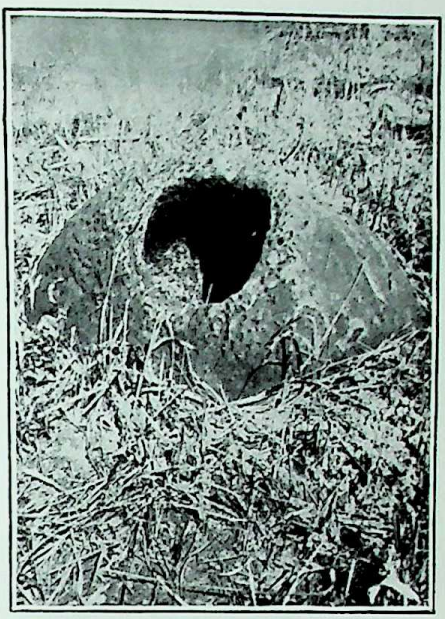

Fig. 2. Monolith near Derebora

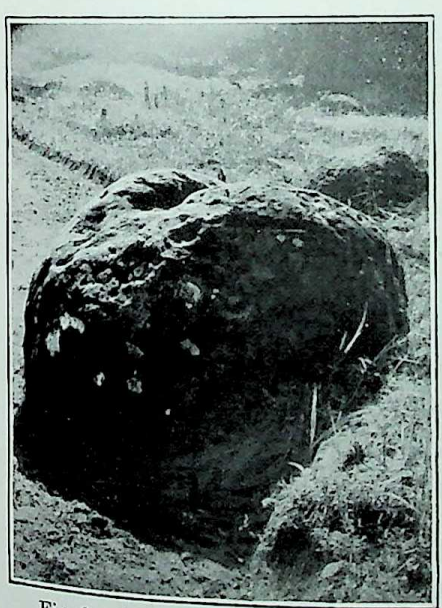

Fig. 3. Monolith by the path near Derebora.

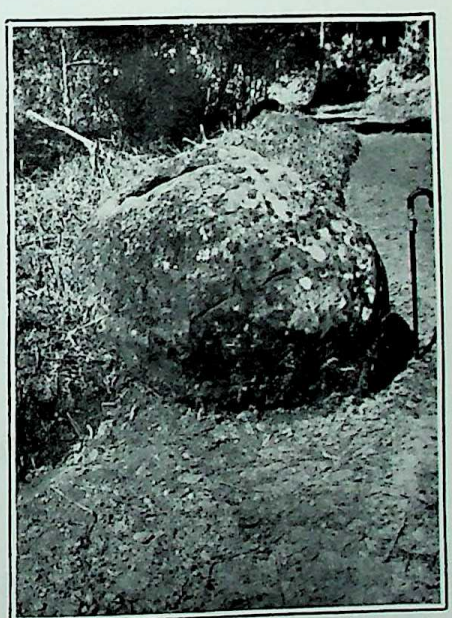

Fig. 4. Monolith by the path near Derebora (Another view of Fig. 3).

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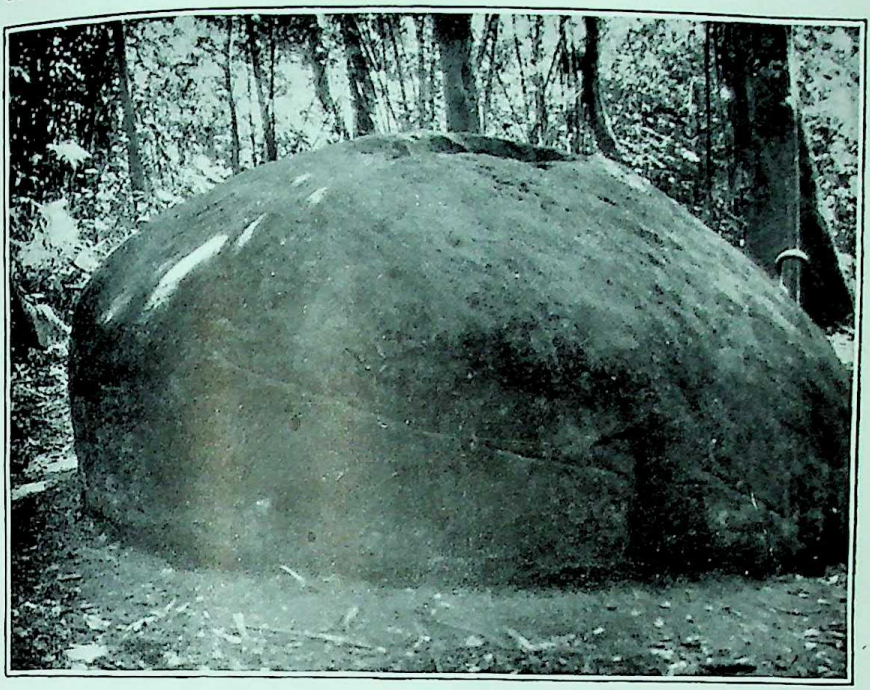

Fig. 1. The great monolith near Derebora.

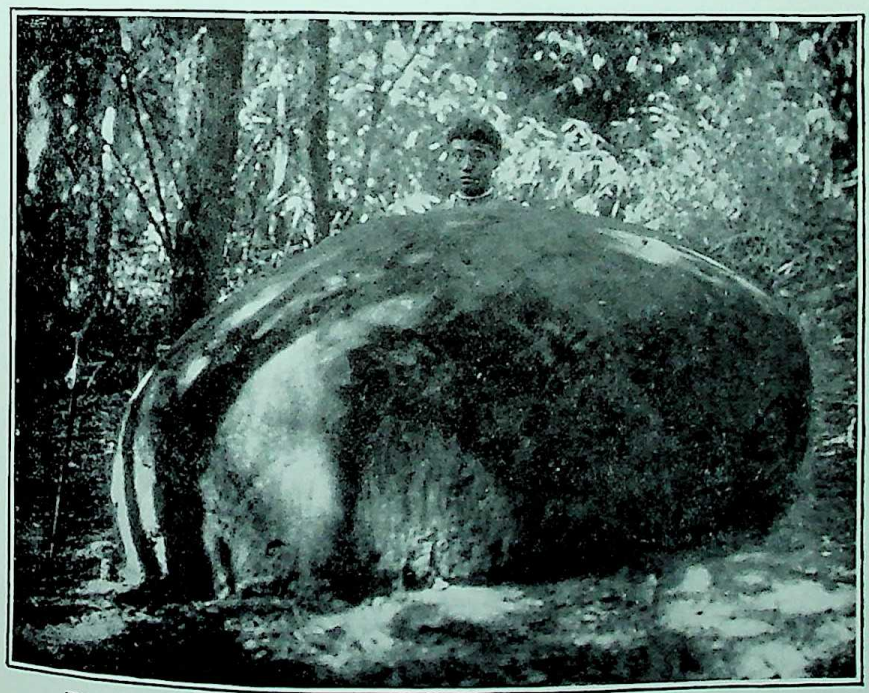

Fig. 2. The great monolith (Fig. 1 above) with a Naga standing inside.

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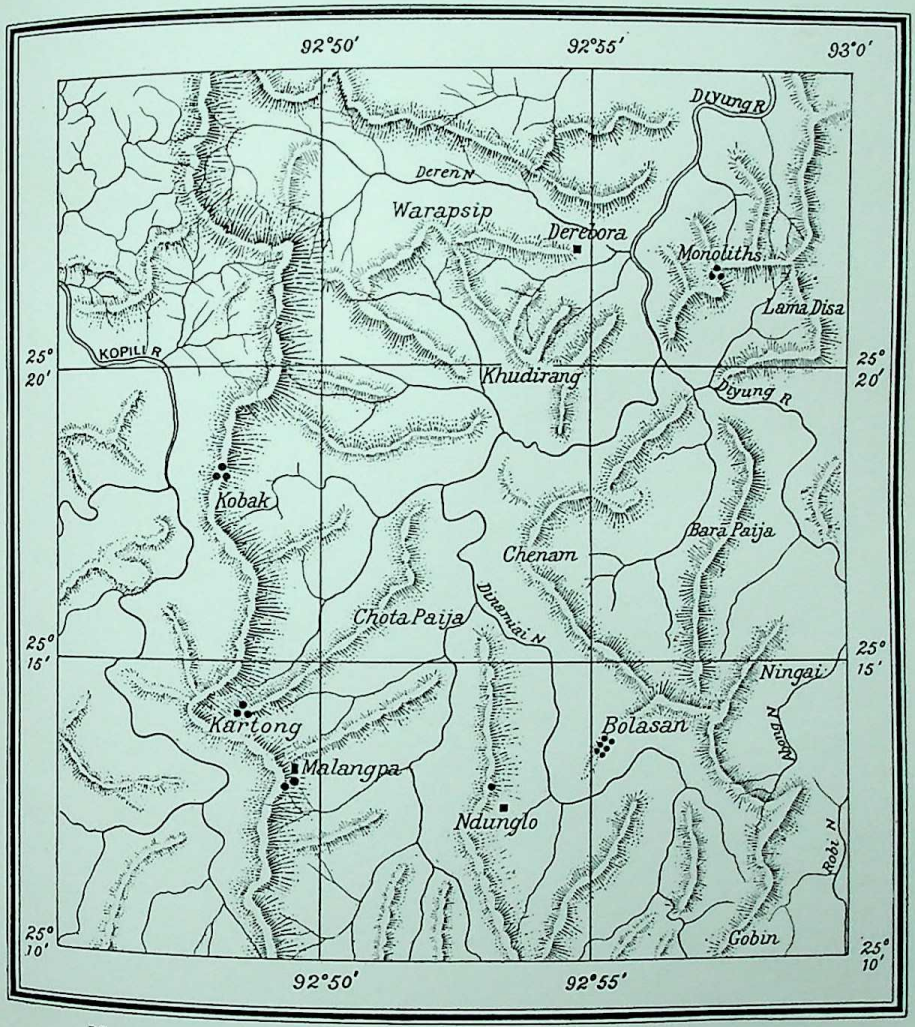

Map of part of the NORTH CACHAR HILLS showing sites of excavated monoliths, thus :— ● ●● ■

Scale : 1 inch=4 miles.

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A contribution to the Chemistry of certain new aromatic Antimonials.

Upendra Nath Brahmachari and Jnanendra Mohan Das Gupta.

The study of organic antimonials has not been so exhaustive as that of organic arsenicals. In recent years some new organic pentavalent antimonials have been prepared and notable among these is urea stibamine discovered by one of us (U.N.B.), which has been found to be of great therapeutic value in the treatment of kala-azar. The reason why much less work has been done with organic antimonials than with arsenicals can be traced mainly to two important causes. First of all, organic antimony compounds are very difficult to prepare and are with few exceptions not crystalline. Secondly, most of them are unstable. This instability limits the formation of various complex antimonials, which has been possible in the case of arsenic. This is especially the case with stibino-benzene compounds as compared with arseno-benzene compounds. Generally speaking, in the case of arsenic, antimony, and bismuth this instability increases as the metallic character of the element becomes more and more pronounced. Thus C-Bi link is less stable than C-Sb link and C-Sb link less stable than C-As link.

The great difficulty involved in the preparation of aryl antimonials is really a barrier against extensive investigations on this type of compound. This difficulty becomes still greater, as minute impurities and slight variations of physical influences affect the stability of the compounds to a considerable extent, thereby bringing about marked changes in their toxicities and therapeutic properties.

In the Indian Journal of Medical Research, the Indian Journal of Medicine, and the Calcutta Medical Journal a series of new organic antimonials were described sometime ago by one of us and some of these compounds have been shown to be of great therapeutic value (U.N.B). Another series of new aromatic antimonials have since been investigated by us in the Brahmachari Research Institute and the following are the first series of such compounds:

1. Disodium p-aminophenyl stibinate-N-methylene sulphonate,
2. Urea-p-amino-phenyl stibinate-N-methylene sulphonate of sodium,
3. Disodium p-stibinilate-N-methylene-sulphinate,

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4. Urea p-amino-phenyl stibinate-N-methylene sulphinate of sodium,
5. P-acetyl-amino-phenyl-stibinate of urea,
6. 1-acetamino-2-azobenzene-4 : 4'-distibinate of sodium,
7. P-hydroxy-phenyl-stibinate of urea.

Some of these compounds as will be seen from their percentage composition given below exhibit strong polymerisation whereby three molecules associate together giving rise to more complex molecules.

Experimental.

(1) Disodium p-aminophenyl stibinate-N-methylene sulphonate $3(4\text{-}SO_3Na.CH_2\text{-}NH.C_6H_4\text{-}SbO_2)H.ONa$.

The starting material in the preparation of this compound is stibanilic acid, which has been prepared by Bart's reaction. Stibanilic acid is neutralised with solution of sodium hydroxide and the sodium salt precipitated by absolute alcohol. The precipitate is then thoroughly washed with absolute alcohol till the filtrate is free from alkali. It is next dried in a vacuum dessicator.

Sodium stibanilate is dissolved in water and then formaldehyde solution and $NaHSO_3$ dissolved in water are added to it successively in a flask. The mixture is next heated on water-bath and filtered. The filtrate is treated with excess of alcohol when a bulky precipitate is produced which is washed with alcohol and dried in a porous plate in a vacuum dessicator.

The product is a light coloured powder—easily soluble in water to a perfectly clear solution which gives faintly acid test.

Composition :—

Dried material corresponds to the formula :

$(SO_3Na.CH_2.NH.C_6H_4.SbO)_3O_2(OH)(ONa)$.

$=C_{21}H_{22}O_{16}N_3S_3Sb_3Na_4$.

Calculated for $C_{21}H_{22}O_{16}N_3S_3Sb_3Na_4$—S=8.7%, N=3.8%, Sb=32.2%

Found S=8.5%, N=4.0%, Sb=32.5%

(2) Urea p-amino-phenyl-stibinate-N-methylene Sulphonate of sodium.

$3(4\text{-}SO_3Na.CH_2.NH.C_6H_4\text{-}SbO^2)H.OH_3N.CO.NH_2$.

The starting material in this preparation is urea stibamine. Urea stibamine is dissolved in a small quantity of water to which formaldehyde solution and $NaHSO_3$ dissolved in little quantity of water are added in succession. A bulky precipitate is formed on adding the constituents. The mixture is warmed

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on water bath. It is next filtered and the filtrate precipitated by alcohol. The precipitate is washed with absolute alcohol and then dried over a porous plate in a vacuum dessicator.

The product is a light coloured powder—easily soluble in water and giving a neutral test to litmus paper.

Composition :—

Dried material corresponds to the formula:

$SO_3Na,CH_2.NH.C_6H_4.SbO)_3O_2(OH)(ONH_3.CO.NH_2)$.

$=C_{22}H_{27}O_{17}N_5S_3Sb_3Na_3$.

Calculated for $C_{22}H_{27}O_{17}N_5S_3Sb_3Na_3$—S=8.29%, N=6.0%, Sb=31.1%

Found S=8.1%, N=6.3%, Sb=31.7%

(3) Disodium-p- stibanilate-N-methylene sulphinate.

$3(4\text{-}SO_2Na.CH_2.NH.C_6H_4\text{-}SbO_2)H.ONa$.

Stibanilic acid is treated with NaOH solution and the sodium salt next precipitated by adding absolute alcohol. The precipitate is washed with alcohol to remove the free alkali. The dried sodium salt is then dissolved in little water and the solution thus obtained treated with sodium formaldehyde sulphoxylate dissolved in little water. A bulky precipitate appears and the whole mixture is warmed on a water-bath when a clear solution is obtained with a small quantity of insoluble impurity. The solution after filtration is bit concentrated and then precipitated by absolute alcohol. The precipitate is next filtered and dried over a porous plate in a vacuum dessicator.

The product is a light coloured powder very soluble in water to a perfectly clear solution, giving a neutral test to litmus paper.

Composition :—

Dried material corresponds to the formula:

$(SO_2Na.CH_2.NH.C_6H_4.SbO)_3O_2(OH)(ONa)$.

$=C_{21}H_{22}O_{13}N_3S_3Sb_3Na_4$.

Calculated for $C_{21}H_{22}O_{13}N_3S_3Sb_3Na_4$—S=9.0%, N=4% Sb=33.7%

Found S=9.4%, N=4.2%, Sb=33.5%

(4) Urea p-amino-phenyl stibinate-N-methylene sulphinate of sodium.

$3(4\text{-}SO_2Na.CH_2,NH.C_6H_4.SbO_2)H.ONH_3.CO.NH_2$.

Urea stibamine is dissolved in water to which a solution of sodium formaldehyde sulphoxylate is added. A bulky precipi-

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tate appears and the whole mixture is well shaken. The mixture is next warmed on a water-bath. A clear solution with a slight sediment at the bottom is obtained which is next filtered. The clear filtrate after concentration is precipitated in cold by absolute alcohol. The precipitate is washed with alcohol, and dried over porous plate in a vacuum dessicator.

The product is a light coloured powder—readily soluble in water to a perfectly clear reddish solution which is faintly acid to litmus paper.

Composition :—

Dried material corresponds to the formula :

$(SO_2Na\ CH_2.NH.C_6H_4.SbO)_3O_2(OH)(ONH_3.CO.NH_2)$.

$=C_{22}H_{27}O_{14}N_5S_3Sb_3Na_3$.

Calculated for $C_{22}H_{27}O_{14}N_5S_3Sb_3Na_3$ – S=3.65%, N=6.3%, Sb=32.4%

Found S=3.4%, N=6.0% Sb=32.0%

(5) P-acetyl-amino-phenyl-stibinate of urea.

$3(4\text{-}CH_3CO.NH.C_6H_3.SbO_2)H.ONH_3.CO.NH_2$.

The starting material in this preparation is p-acetyl-amino-phenyl stibinic acid which is obtained from the corresponding acetyl phenylene diamine. The acid is thoroughly washed and the pasty mass is obtained in a semi-dry state by pressing over porous plate. The moist acid is treated with a little urea and then well mixed. The mixture is heated in boiling water when a reddish solution is obtained. A little more water may be added, if necessary, to obtain a clear solution and then warmed. The solution is next filtered through fluted filter paper and the filtrate precipitated by absolute alcohol. The precipitate is well washed with the same and dried over porous plate in a vacuum dessicator.

The product is a yellowish powder and dissolves in water to a clear solution, which is faintly acid.

Composition :—

Dried material corresponds to the formula :

$(CH_3.CO.NH.C_6H_4.SbO)_3O_2$. (OH) $(O.NH_3.CO.NH_2)$.

$=C_{25}H_{30}O_{11}N_5Sb_3$.

Calculated for $C_{25}H_{30}O_{11}N_5Sb_3$—N=7.48%, Sb=38.4%

Found N=7.9%, Sb=38.0%

(6) 1-acetamino-2-azobenzene-(4 : 4′)-distibinate of sodium.

$CH_3\ CO.NH.$ SbO_3HNa.

$N=N$ $-SbO_3HNa$.—

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The starting materials in the preparation of this compound are acetyl stibanilic acid and stibanilic acid. The former is obtained from acetyl-p-phenylene diamine and the latter by its hydrolysis with alkali. The stibanilic acid is partially dried on a porous plate and suspended in a small quantity of water. The mixture is cooled and treated with excess of H_2SO_4 when a clear solution is obtained. Acetyl stibanilic acid dried similarly is weighed and then dissolved in excess of alkali. The former acid solution is then gradually treated with $NaNO_2$ solution till it gives a blue coloration with the starch-iodide paper. The alkaline solution of the acetyl stibanilic acid is also cooled in ice and then gradually added to the diazotised solution. It is then filtered after allowing the little quantity of froth to escape. The sodium salt is then precipitated from the concentrated solution by absolute alcohol—dried over porous plate in a vacuum dessicator.

The product is a brown powder, dissolving in water to a clear red solution with neutral test.

Composition :—

Dried material.

Calculated for $C_{14}H_{13}O_7N_3Sb_2Na_2$—N=6.76%, Sb=38.6%

Found N=7.0%, Sb=38.1%

(7) P-hydroxy-phenyl-stibinate of urea.

$4—OH.C_6H_4.SbO_3H.NH_3.CO.NH_2$.

P-stibanilic acid which is obtained from acetyl p-phenylene diamine is made into a thick paste with water and the excess of H_2SO_4 added, the mixture being cooled. A solution is produced in this way which is well stirred while $NaNO_2$ solution is gradually added till it imparts blue colour to starchiodide paper immediately. The mass is next dissolved in alkali after gentle warming to liberate all nitrogen and filtered. The filtrate is reprecipitated with acetic acid. The mixture is filtered and well washed with water. The hydroxy-phenyl-stibinic acid thus obtained, which can also be directly obtained from p-amino-phenol by applying Bart's reaction, is then well mixed with little excess of urea and heated on water bath when a red clear solution is obtained. It is then filtered and precipitated by acetone and dried in vacuo over porous plate.

The product is a yellow powder readily dissolving in water to a perfectly clear solution which is faintly acid to litmus paper.

Composition :—

Dried material.

Calculated for $C_7H_{11}O_5N_2Sb$—N=8.7%, Sb=37%

Found N=9%, Sb=37.6%

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Therapeutic.

The therapeutic value of these compounds, if any, will be reported later on.

References.

(1) Indian Journal of Medical Research, Vol. X, No. 2, Oct. 1922; Vol. XI, No. 1, July 1923; Vol. XI, No. 11, Oct. 1923; Vol. XI, No. 4, April 1924; Vol. XII, No. I, July 1924; Vol. XII, No. 2, Oct. 1924; Vol. XII, No. 4, April 1925; Vol. XIII, No. 1, July 1925; Vol. XIII, No 3, January 1926.

(2) Indian Journal of Medicine, June 1926, Sep., 1926.

(3) Calcutta Medical Journal, June 1926, Aug., 1926.

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The Ṛg-veda in the making.

By MM. H. P. SHASTRI.

In the second chapter of the Second Āraṇyaka of the Aitareya Āraṇyaka, it is said that the ṛsis of the Ṛg-veda were at one time enumerated in the following order:—

1. Śatarcinaḥ	I maṇḍala.	10. Pāvamānyaḥ	IX maṇḍala.
2. Madhyamāḥ		11. Kṣudra-sūktāḥ	X ,,
3. Gṛtsamadaḥ	II ,,	12. Mahā-sūktāḥ	
4. Viśvāmitraḥ	III ,,	13. Sūktam.	
5. Vāmadevaḥ	IV ,,	14. Ṛk.	
6. Atrayaḥ	V ,,	15. Ardharcaḥ.	
7. Bharadvājaḥ	VI ,,	16. Padam.	
8. Vasiṣṭhaḥ	VII ,,	17. Akṣaram.	
9. Pragāthāḥ	VIII ,,		

This is the whole of the Ṛg-veda. The Ṛg-veda assumed this shape before it was compiled in the Saṃhitā form with 10 maṇḍalas, Nos. 1 and 2 forming the 1st or the Śatarcina maṇḍala, in 191 sūktas. The 3rd is the second maṇḍala, called Gṛtsa-mada maṇḍala, in 43 sūktas; the 4th is the third maṇḍala called the Viśvāmitra maṇḍala, in 62 sūktas, the 5th is the fourth maṇḍala, called the Vāmadeva maṇḍala, in 58 sūktas, the 6th is the 5th maṇḍala, called Atri maṇḍala, in 87 sūktas, the 7th is the 6th or Bharadvāja maṇḍala, in 75 sūktas, the 8th is the 7th or Vasiṣṭha maṇḍala, in 104 sūktas, the 9th is the 8th or Pragāthā maṇḍala, in 103 sūktas, the 10th is the 9th or Pāvamāna maṇḍala, in 114 sūktas, Nos. 11 and 12 form the 10th or the last maṇḍala, in 191 sūktas.

The last 5 items are not included in the Saṃhitā; they are to be found scattered all over the Vedic literature; e.g., a sūkta "Vidā maghavan vidā gātum anuśaṃsiṣo diśaḥ" is the yoni-ṛk of the Mahā-nāmnī sāman. It is in 9 ṛcs and is to be found in the 4th Āraṇyaka of the Aitareya, but not in the Ṛg-veda Saṃhita. The ṛk, "Ṛtaṃ satyaṃ Paraṃ Brahma" is not to be found in the Ṛg-veda, but is uttered by all Sāma-vedī Brāhmaṇas in their Sandhyās. Similarly, Rṅ-mantras in Ardharchas, Padas and Akṣaras, are not to be found in the Saṃhitā, but in the rituals of Vedic literature.

The second chapter of the Second Āraṇyaka of the Aitareya contains information about a collection of Rṅ-mantras from

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one-syllable mantra to a mantra of 52 rcs, viz., "Asya vāmasya patitasya" (Ṛg-v. I, 164.).

This was the state of the mantras of the Ṛg-veda when the Second Aitareya Āraṇyaka was composed. Subsequent to this, the Ṛg-veda was compiled in ten maṇḍalas As we find them, these ten maṇḍalas follow generally the lead of the Aitareya Āraṇyaka, except in this that the first two items of the A.A. were comprehended in maṇḍala I, and the 11th and 12th, in maṇḍala X.

The Maṇḍala compilation follows the order of the Aitareya divisions. The first 51 sūktas of the 1st maṇḍala are called Śatarcinas, because each ṛṣi of this portion of the Ṛg-veda composed about 100 ṛcs, therefore they are called Śatarcinas. The sūktas from 52-191 of maṇḍala I by various ṛṣis, e.g., Gautama, Agastya, Jamadagni, and so on, are called Madhyamas; because the contribution of each ṛṣi is not so large as that of the family-maṇḍalas (II–VIII) and not so small as that of the Śatarcinas. In the 11th and 12th divisions of the A.A. are Kṣudru-sūktas and Mahā-sūktas. But in the 10th maṇḍala, the Kṣudra-sūktas crowd at the end. In fact, after the first-half of the maṇḍala, the sūktas diminish in volume,—from 15 ṛcs to 3; though there are some deviations from this general rule. All the maṇḍalas together of the Ṛg-veda Śākala-śākhā contain 1017 sūktas, and the study of the various arrangements they have undergone is interesting and instructive. Taking the family maṇḍalas as the nucleus, additions were made on both sides, in the beginning and at the end, till the whole was balanced with 191 sūktas in the 1st and 191 sūktas in the last maṇḍalas.

But the most interesting step taken in the arrangement of the sūktas of the Ṛg-veda is its last revision into 8 aṣṭakas of 8 pādas each. The same 1017 sūktas of the Maṇḍala division, which was an unequal division,—some having 191 sūktas while another only 43,—into 64 nearly equal parts is an extraordinary thing. The Maṇḍala division is a historical division, while the Aṣṭaka division is an educational division,—divisions into lessons. While the history of the Maṇḍala division was lost into obscurity of past ages, that of the Aṣṭaka division is a historical one. It was done by the Brāhmaṇas of Pañcāla some centuries before Buddha. In Vātsāyana's Kāma-sūtra, (Bk. II, ch. 2)[1] the Pañcālas are said to have sub-divided the ten phases of the act of union between a man and a woman

[1] कलानां चतुःषष्टित्वात्तासां च संप्रयोगांगभूतत्वात् कलासमूहो वा चतुःषष्टिरिति ऋचां दशतयीनां च संज्ञितत्वात्। इहापि तदर्थसंबन्धात्। पंचालसंबन्धाच्च बभ्रूचैरेषा पूजार्थं संज्ञा प्रवर्तिता इत्येके।

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into 64 sub-divisions or kalās, and there the Sūtra-kāra says that the Pañcāla people are in the habit of splitting 10 into 64, as they had done about the Rg-veda where they had divided 10 maṇḍalas into 64 adhyāyas. Since then both the Maṇḍala and the Aṣṭaka divisions are in vogue.

The commentary makes it clear and says :—

अत्र हि गौतादयः कलाश्चतुःषष्टिरुक्ता। ततस्तत्समूहो वा संप्रयोगाङ्गम्। चतुःषष्टिः सांप्रयोगिके वा शास्त्रिकदेशे वर्त्तते। तत्र हि पाञ्चालिकी चतुःषष्टिः कथ्यते। कथं ताश्चतुःषष्टिरित्याह—दशतयीनां चेति। दशावयवा मण्डलानि यासाञ्चाम्। इत्यवयवे तयप्। दशतय्यश्चाश्चतुःषष्टिरिति संज्ञिताः। इहापीति संप्रयोगाङ्गे। तदर्थसंबन्धादिति दशावयवमण्डलार्थसंबन्धात्। चतुःषष्टिरिति संज्ञा प्रवर्त्तत इति संबन्धः। संप्रयोगाङ्गं हि दशावयवाः। यथोक्तम्—"आलिङ्गनं चुम्बनदन्तकर्मनखक्षतं सीत्कृतपानिघातम्। संवेशनं चोपरितोपरिष्टं नरायितं चेति दशाङ्गमाद्यः"॥ इति। पञ्चालसंबन्धाच्च प्रवर्त्तिता। पञ्चालेन महर्षिणा ऋग्वेदे चतुःषष्टिर्निगदिता। वात्स्येनापि पाञ्चालेन खलते सांप्रयोगिके ऽधिकरणे आलिङ्गनादय उक्ताः। ततश्च द्वयोरप्येकगोत्रनिमित्तसमाख्येन पाञ्चालेन निगदनात् संबन्धोऽस्ति। पूजार्थेति। उभयोरपि पत्नयो ऋग्वेदैकदेशवर्त्तिन्यपि संज्ञा वक्तृचैरशिष्टाचारैरालिङ्गनादिषु पूजार्था प्रवर्त्तिता। केचिदाहुः— "तत्पूजां च वक्ष्यति—

"विद्वद्भिः पूजितामेतां खलैरपि सुपूजिताम्।
पूजितां गणिकासंघैर्नन्दिनीं को न पूजयेत्॥" इति।

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On a "Drop-Door" Fishing Trap used in the Myitkyina District, Upper Burma.

By B. Chopra.

(*Read at the meeting of the Sixteenth Indian Science Congress and published with the permission of the Director, Zoological Survey of India.*)

While investigating the fauna of the Indawgyi Lake and its connected streams in Upper Burma in the winter of 1926 special efforts were made to study the methods of fishing and the fishing appliances used in the area. The Indawgyi Lake has a rich fish fauna, and there are, consequently, a number of important fishing centres in the locality.

The Indawgyi[1] is a very extensive freshwater lake, being about 16 miles long and as much as 5 miles broad, and is connected with the water-system of the Irrawady through the Indaw river, which flows out of the lake at its north-east end. The Indaw after flowing for a dozen miles or so is joined by another stream, the Namting, and at the confluence of the two lies Chaungwa, the most important fishing village in the locality, on account of the rich fisheries flourishing there.

By far the largest quantity of fish is caught round about Chaungwa in large fishing enclosures that are set up in the course of the rivers, but netting and trapping of fish is also extensively pursued. The traps, or *myon* as they are called, are placed in the course of the streams near the banks, especially in the midst of vegetation, and are responsible for a great deal of fish caught in the locality. The trap most commonly used in the locality is the *kathey myon*, and is supposed to have come from Manipur[2] in Assam. But the *kya myon*, or the drop-door trap, that forms the subject of this note, is supposed to be indigenous. It is perhaps not quite as efficient as the Manipuri trap and is, no doubt for that reason, being gradually ousted by the latter.

The *kya myon* works on the same principle as a rat-trap does—the door drops down with a snap as soon as the victim, a rat in the case of a rat-trap and the fish in the case of a *myon*,

---

[1] For physical features of this lake see Chopra, *Journ. Proc. Asiat. Soc. of Bengal*, (N.S.) XXII, p. 203, (1926).

[2] Hora in his account of the fisheries of Manipur (*Rec. Ind. Mus.*, XXII, pp. 209–214, pls. xi, xii, 1921) does not describe or figure any trap like the "Manipuri trap" as used in Upper Burma.

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happens to touch the spring. It is a long cone-shaped basket, the major portion of which is made out of a single piece of bamboo, and has a wide mesh. The narrow end of the basket is formed of a bamboo node; the stem is split up into long narrow strips, which, with other spare ones inserted in between, form the long axis of the basket. These strips are woven together in the form of a cone-shaped basket with other strips going round, but leaving a very wide mesh. At the large open end, a double rectangular or squarish frame is fitted up, through which a door made of strong bamboo matting or bamboo strips woven together slides up and down. By the sides of the door two long poles are fixed vertically, one on each side, and the door-frame is further strengthened by shorter bamboo sticks tied near the base. The long poles are grooved to allow of the door sliding up and down. The door has at about the middle of its upper side a pocket-like structure fashioned out of bamboo strips and in this is placed a fairly heavy stone. A long cane string is tied to the upper side of the door and passes over a roller (formed by passing a stick through a hollow piece of bamboo) fixed horizontally between the vertical poles near their upper end. At the free end of this string a small stick is tied. Inside the net at about its broadest point a number of cane strings fixed to the bottom of the net at different points are brought up above the net and tied together to a small bamboo stick. At this point, on the outside of the basket, there is a small loop made of cane string and with its help the two small sticks—one at the end of the string connected with the door and coming over the roller and the other at the end of the inner strings—are so adjusted that even a comparatively light touch to one of the strings inside the basket releases the door string and the door, weighed as it is with the heavy stone, comes down with a snap. A small loop, behind the ramification of the strings, is used for tying a bait to it, and any fish of a large size in trying to reach the bait is almost sure to touch at least one of the strings. Once this happens the door is automatically released and it is impossible for the fish to get out.

The trap is used for catching large fish only and is fixed in fairly deep water, where it is totally submerged, only a part of the vertical poles being visible above the surface.

The *kya myon* appears to be rather a crude trap as only one fish can be caught at a time and once the door is released, even by some floating piece of wood, etc., it ceases to function until it is set again. The very large mesh precludes the possibility of any small fish being trapped. On account of the amazing richness of the fish-fauna in this area, however, this trap has its uses and a fairly large number of fish are trapped by it. Also the large size of the fish that are caught in this trap must be a strong inducement in favour of its use as opposed to the other kinds of traps in which a large number of comparative-

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ly small fish are caught. As stated above, however, this trap is gradually falling out of use. One man generally uses 10–15 of these traps, clearing them, with the help of a small boat, twice a day, in the morning and evening.

The tax for each *myon*, I was told by the Headman of Chaungwa, is Rs. 2/8/-per year.

Kya myon is made in different sizes, but a fairly large specimen examined had the following measurements:—

Greatest length of the basket	..	50″
,, breadth a little behind the mouth	..	$19\frac{3}{4}$″
Length of door-frame from inside	..	$15\frac{1}{2}$″
Height ,, ,, ,, ,,	..	$11\frac{3}{4}$″
Height of vertical poles	..	$78\frac{1}{2}$″

The photographs accompanying this note are from a model of the trap made by a fisherman at Chaungwa. The right hand figure shows the trap in side view, with the door closed; that on the left is from front and shows the door open.

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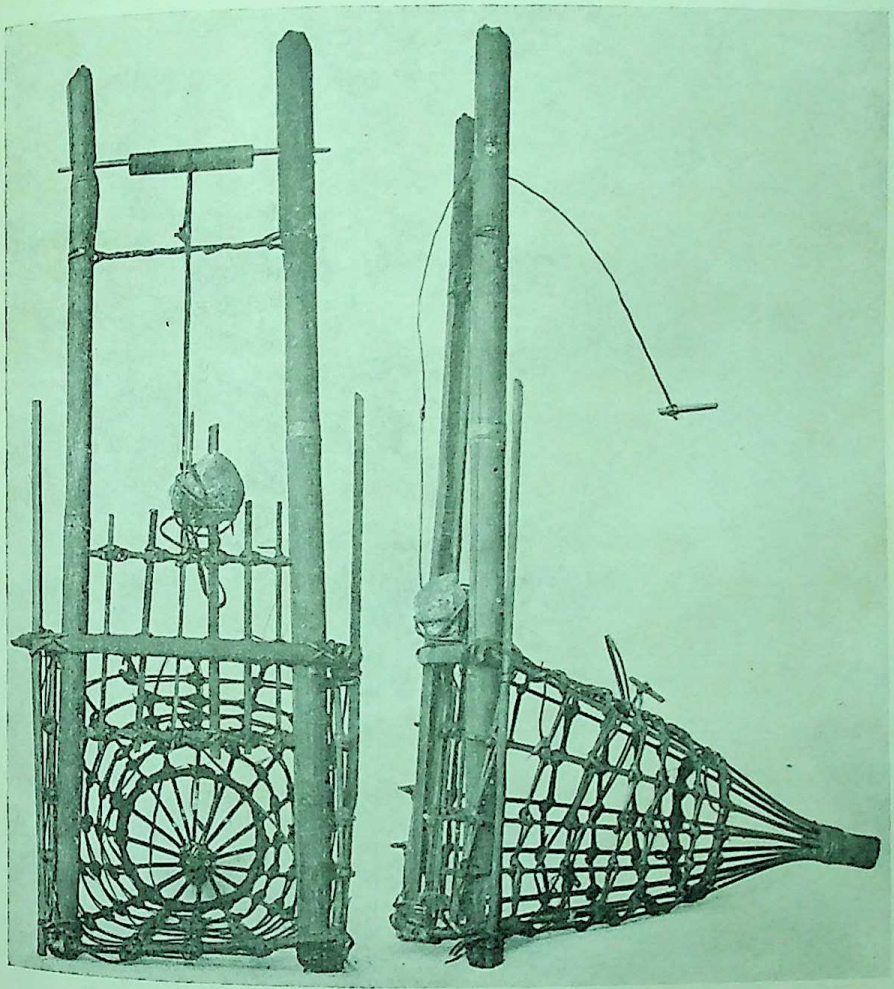

Upper Burma "Drop-Door" Fishing Trap.

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CONTINUATION CONTENTS.

Page

10. J. C. Sinha.
Indo-American Trade, Past and Present .. 201
(*Published separately, March 7th*, 1930.)

11. S. R. Kashyap.
Some Geographical Observations in Western Tibet .. 223
(With plates 7 to 15.)
(*Published separately, March 11th*, 1930.)

12. V. V. Sohoni.
Meteorological Normals of Calcutta 237
(With plate 16.)
(*Published separately, March 14th*, 1930.)

13. J. P. Mills and J. H. Hutton.
Ancient Monoliths of North Cachar 285
(With plates 17 to 28.)
(*Published separately, April 4th*, 1930.)

14. U. N. Brahmachari and J. M. Das Gupta.
A contribution to the Chemistry of certain new aromatic Antimonials. 301
(*Published separately, April 4th*, 1930.)

15. MM. H. P. Shastri.
The Ṛg-veda in the making 307
(*Published separately, April 4th*, 1930.)

16. B. Chopra.
On a "Drop-door" Fishing Trap used in the Myitkyina District, Upper Burma. 311
(With plate 29.)
(*Published separately, April 4th*, 1930.)

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CONTENTS.

Page

1. J. H. Hutton.
Outline of Chang Grammar 1
(*Published separately, January 15th*, 1930.)

2. Provash Chandra Basu.
Head-dress of the Hill-Tribes of Assam .. 103
(With plates 1 to 5.)
(*Published separately, January, 20th*, 1930.)

3. Kalipada Mitra.
Originals and Parallels of Some Santal Folk Tales 115
(*Published separately, January 20th*, 1930.)

4. D. N. Majumdar.
Race and Adaptability 149
(*Published separately, February 10th*, 1930.)

5. Probhash Chandra Basu.
The Anthropometry of the Bhuiyas of Mayurbhanj .. 157
(*Published separately, February 10th*, 1930.)

6. Kunja Govinda Goswami.
The Satak Copper Plate Grant of King Rāma Simha II, of Jaintia of 1809 A.D. 165
(*Published separately, February 20th*, 1930.)

7. K. Zachariah.
Thucydides II. 13. A possible explanation of certain difficulties. 171
(*Published separately, February 20th*, 1930.)

8. Bonavis Bonnell.
Geophilid Centipedes from the bed of the Cooum River (Madras). 181
(With plate 6.)
(*Published separately, February 25th*, 1930.)

9. R. R. Halder.
The Chauhāns 185
(*Published separately, March 6th*, 1930.)

(For continuation see overleaf.)

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Numismatic Supplement No. XLII

[for 1929]

Articles 283–297

CONTENTS

		Page
283.	A find of 182 Silver Coins of Kings of the Ḥusainī and Sūrī Dynasties from Raipārā, *Thāna* Dohar, District Dacca, Eastern Bengal. By H. E. Stapleton.	5
284.	Notes on a few rare Indian Coins .. .. .. By P. Thorburn.	23
285.	Āndhra Coins in the Lord Irwin Agricultural Museum, Kolhāpūr. By K. G. Kundangar.	30
286.	A Silver Coin struck in Nepāl in the name of ʻAlā-ud-din Muḥammad Shāh Khilji. By Durgā Prasād.	37
287.	Aurangzeb's Rupee of Dāru-s-Surūr-i-Burhānpūr .. .. By V. D. B. Tāraporevālā.	39
288.	Coins of Nāṣīr Shāh of Gujarāt .. .. .. By C. R. Singhal.	40
289.	The Unassigned Coins of Jalāl Shāh Sultāni .. .. By S. H. Hodivālā.	41
290.	Shashkāni or Shashgāni ? .. .. By S. H. Hodivālā.	46
291.	Akbarpūr-Tānda and Akbarpūr .. .. .. By S. H. Hodivālā.	54
292.	The Chronology of the Zodiacal Coins. A Postscript .. By S. H. Hodivālā.	57
293.	The Coins bearing the name of Nūr Jahān .. .. By S. H. Hodivālā.	59
294.	The Kashmīr Coins of Aḥmad Shāh and ʻĀlamgīr II .. By S. H. Hodivālā.	68
295.	The Multān Coins of ʻĀlamgīr II .. .. .. By S. H. Hodivālā.	70
296.	Coins Exhibited at the Annual Meeting of the N.S.I. at Benāres in January 1929. By M. F. C. Martin.	72
297.	Some Rare Ghaznavid Coins .. .. By M. F. C. Martin.	75

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ARTICLES 283–297

Continued from "Journal and Proceedings", Vol. XXIV, New Series, No 3.

283. A FIND OF 182 SILVER COINS OF KINGS OF THE HUSAINĪ AND SŪRĪ DYNASTIES FROM RAIPĀRĀ, *Thāna* DOHAR, DISTRICT DACCA, EASTERN BENGAL.

Mr. H. Nelson Wright described in 1904 (Numismatic Supplement No. 13; pp. 233–235 of the *J.A.S.B.*, Vol. LXXIII, Part I) a find of 110 silver coins that were found at Belbārī, *Thāna* English Bazar, District Mālda (*i.e.*, at a spot lying immediately to the south-east of the citadel of Gaur, the ancient capital of Bengal). These included 2 coins of Nasrat Shāh, 63 coins of Sher Shāh, 42 of Islām Shāh, and 2 of Muḥammad 'Ādil. The earliest coin of his find was dated 925 A.H. (=1519 A.D) and the latest 961 A.H. (=1554 A.D.), so that they covered a period of 35 solar years and the most recent coin was 375 years old. The following account of a find of 182 coins of more or less the same period merits the careful attention of numismatists as several coins have not previously been described and the Mint names and dates add considerably to our knowledge of the period A.H. 899–953 (A.D. 1493–1545) covered by the new find.

2. The find spot in this case was about 2 miles inland from the Mainat Steamer Station on the northern bank of the river Padma and $3\frac{1}{2}$ miles from Nawābganj Police Station which lies further inland along the old Dak Road from Jessore to Dacca (and probably on to Sunārgānw). Some labourers were engaged by the Muhammadan owner of the land to dig earth and, in the course of the excavation, a copper pot was discovered on March 6th 1928, containing the coins. As the coins recovered by the Magistrate of Dacca did not occupy more than $\frac{1}{8}$th of the pot, possibly the 182 coins only represented part of the actual find.

3. Munshī 'Abdul Hakīm Chaudhuri (*alias* Tunu Mian) the owner of the land, possesses a pedigree showing that his family is descended from a courtier of Akbar and has probably been settled in the vicinity for about 300 years; but as the coins cover a period of 436–384 years ago, it is evident that the coins were buried in the place by some previous owners —possibly, as the name Raipārā suggests, a Hindu family of *Rais* who were dispossessed of their property during the troubled period that set in after the death of Sher Shāh in 1545 A.D.,

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and which led to the re-establishment of the Mughal Emperor, Humāyūn, on the throne of Delhi after the second battle of Pānīpat at the end of 1556 A.D.

4. Of the 182 coins—

	A.H.
(1) 30 are of 'Alāuddīn Ḥusain Shāh— independent King of Bengal ..	899–925
(2) 36 are of Nāṣiruddīn Naṣrat Shāh (Son of No. 1)	925–939
(3) 3 of 'Alāuddīn Fīrūz Shāh (son of No. 2)	939
(4) 8 of Ghiyāthuddīn Maḥmūd Shāh (son of No. 1) .. (partial rule	933–939) 939–945
(5) 51 coins of Farīduddīn Sher Shāh of the Sūrī Dynasty	946–952
(6) 54 coins of Jalāluddīn Islām Shāh (son of Sher Shāh)	952–960

5. The following is a detailed description of the coins with reference to Mint, Date, and (generally) either the Indian Museum or British Museum Catalogue (referred to as I.M.C. and B.M.C.).

I. 'Alāuddīn Ḥusain Shāh.

Dar al-Ḍarb: 962 (*sic* for 926 or 922). Similar to I.M.C. No. 178 but in triple circle. The inscription refers to Ḥusain Shāh being the conqueror of Kāmrū, Kamata, Jājnagar, and Orissa. (Fig. 1.)
Wts: 163·10: 142·7. Sizes 1·08: 1·1 .. 2

Dār (*al-Ḍarb*): date 922: inscription as on the 2 previous coins but in double circle.
Small coin. Wt. 162·8. Size ·96 1

Ditto: similar to previous 3 coins: but apparently only in double circle. Traces of date. Wt. 161·7. Size 1·13 1

Ditto: date 9-0 (?). Obverse as in I.M.C. No. 188 but reverse as in No. 187: date doubtful. Wts. 160·9: 163·4. Sizes (both) 1·05 .. 2

Fatḥābād: 899. Inscription as in I.M.C. No. 169 but no loops outside circle. Wt. 161·9. Size 1·01 7

Ditto: date (89) 9: type as in I.M.C. No. 175 (Kāmrū, Kamata, etc.). Wts. 151·2. Size 1·02 2

Ditto: date illegible: as in I.M.C. No. 175 but in double circle. Wt. 162·4. Size *Obv.* 1·10: *Rev.* (inscription at 90° to that of *Obv.*) 1·17 .. 1

Ditto: date 89 (*sic*). Smaller coin. Same inscription as in previous coins: except for the addi-

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Brought forward .. 16

tion of الله between خلد and ملكه in the last but one line of obverse. Wt. 161·2. Size ·92 .. 1

Ḥusainābād: date (90) 8. Type as in I.M.C. No. 189. Wt. 160·9. Size 1·05 3

Ditto: date 89 (9). As in I.M.C. No. 189 but cruder, especially as regards mint name. Wt. 162·6. Size 1·1 1

Khizānah Ḥusainābād. Date 919 (written cursively so as to appear more like 94: *cf.* B.M.C. No. 130 (where خزانه is erroneously read as سنه - just as, in I.M.C No. 179, the word is read خليفه. Possibly the same as in I.M.C. No. 179 and B.M.C. No. 130, but obverse inscription—in triple circle with loops at 4 quadrants of inner circles—reads Kamata, Jājnagar and Marwūl;) (Fig. 2). Wts. 160·7: 163·6: 162·7. Sizes 1·05–1·12 4

Khizānah Ḥusainābād: same date and reading, but only single circle. Wts. 161·8: 141·7. Sizes 1·09: ·98 3

The mint Ḥusainābād was active throughout almost the whole of Ḥusain Shāh's reign and may, possibly, be identified with the *Taksāl* at Fīrūzpūr, the southernmost quarter of Gaur. This name Fīrūzpūr may also indicate that it was Saifuddīn Fīrūz Shāh—the Bengal King who reigned from 1486–1489—who was responsible for the prolongation of Gaur by additional embankments to the south of the main citadel, the erection of which was (according to the author of *Riyāz us-Salātīn*) begun by Nāṣiruddīn Maḥmūd Shāh (1442–1459) and which, as the recent discovery of an inscription has shown, was still in all probability inhabited in 926 A.H. (=1520 A.D.) by Naṣrat Shāh. The Treasury (*Khizānah*) was situated in the citadel itself: and the following dates have been recorded on coins bearing the name of either Ḥusainābād or *Khizānah*: 899, 900, 905, 907 (or 917), 909 (or 919), 912, 914, and 919.

Mint doubtful: ؟ Bārbakābād: *cf.* I.M.C. No. 163 for coin of 'Alāuddīn's predecessor Muẓaffar Shāh from this Mint. Dates (9)10 and (90)7. Inscription as in I M.C. No. 182. Wts. 164·25: 163·5. Sizes 1·08 and 1·13 .. 2

Total of Ḥusain Shāh's coins .. 30

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II. Nāṣiruddīn Naṣrat Shāh.

Dār al-Ḍarb. Date on one 8 (?). As in I.M.C. No. 211, but different mint.
Both sides apparently in double circle with loops at quadrants. Two of the coins are distinctly larger than the other four (Wts. 162·7 : 165·45. Sizes ·93 and ·97).
Wts 162·8 : 161.6. Sizes. ·84–·88 .. 6

Fatḥābād Dār al-Ḍarb: 965 (for 925). As in I.M.C. No. 202: but another date (? –99) after Fatḥābād on bottom line of obverse. Wt. 165·0 Size 1·03 1

Ditto Ditto. The same: but cruder and much bolder lettering. Wt. 164·9. Size 1·02 .. 12

Ḥusainābād: 925. As in I.M.C. No. 206 but the reverse reads

نصرتشاه
سلطان ابن حسينشاه
سلطان سيد حسيني
خلد الله ملكه
و سلطانه ٩٢٥

Wts. 162·7 : 164·5. Size 1·01–1·09 (the former possibly differing in having semi-circles instead of arabesques in margin) 3

Ḥusainābād Dār al-Ḍarb: 925. As in I.M.C. No. 207. Wt. 163·5. Size 1·12 2

Ḥusainābād Dār al-Ḍarb: 925. New type—within double circle containing crossed lattice work and dots. Inscription as in I.M.C. No. 207, but the reading of reverse of the I.M.C. coin should be corrected as follows:—

شاه السلطان
نصرتشا السلطان
حسين خالله (*sic*) ملكه
بن
الحسيني
دار الضرب ٩٢٥

Wts. 162·7 : 160·5. Sizes 1·04 : 1·07. 2
Neither of these coins is clear enough to reproduce but Fig. 3 shows a good specimen of

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Brought forward .. 26

this new type from my own collection. Wt. 161·0. Size 1 05.

Khalīfatābād: date 922. Inscription in double circle: coin probably the same as in I.M.C. No. 212. Wt. 161·8. Size ·95 1

Naṣratābād. In one specimen (? 2) 97 (for 927): in the other only 97. Otherwise, as in I.M.C. No. 208. Wts. 161·1 : 161 2. Sizes ·97 : 1·02 2

Ditto. Date 92 (-). As in previous 2 coins but inscription in smaller circle. Wts. 159·5 : 163·2. Sizes 87 : ·94 2

Mint doubtful. New type. No date. In a double circle with semi-circles between—

Obverse.	*Reverse.*
السلطان	نصرتشاه
بن السلطان	السلطان بن
ناصر الدنيا و	حسين شاه السلطان
الدين المظفر	خلد الله ملكه : برنصرودد (*sic*)
ابو	

A reproduction of the Reverse of this coin is given in Fig. 4 as not only is the reading of the lettering in the bottom left-hand corner unintelligible, but the same type is used as a model by Naṣrat's successor Ghiyāthuddīn in a coin in my own cabinet.

Wts. 164·3 : 162·1. Sizes ·98 : 1·0 2

No mint or date clearly visible. New type with crude lettering. In a circle surrounded by arabesques—

Obverse.	*Reverse.* (*a*)	*Reverse.* (*b*)
السلطان	نصرتشاه	شاه السلطان
ابن السلطان	السلطان ابن	نصرتشاه السلطان
ناصر الدنيا و الد	حسين شاه السلطان	بن حسين حسيني
ين ابو المظفر	حسيني خلد الله - -	خالله (*sic*) ملكه
	ملكه و سلطانه	و السلطانه .. ٩

The marginal decoration of obverse of (*b*) has been almost entirely obscured by shroff marks but reverse decoration seems different; hence, in view of the different reading of Reverse, (*b*) may be a different coin from the

Carried over .. 33

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Brought forward .. 33

same mint. Reproduction of Obverse of (*a*) and Reverse of (*b*) are given as Figs. 5 and 6.

Wts. 164·1 : 162·3. Size (both) 1·03 2

Mint doubtful. No date visible. Inscription within (on obverse) double, and (on reverse) single circle

Obverse.	*Reverse.*
As in previous coins, except that the الدين is completed in the 3rd line.	نصرتشاه السلطان ابن حسين شاه السلطان الحسيني خلد الله ملكه (4th line illegible : ? begins و السطانه - or mint)

Wt. 162·9. Size ·98 1

Total of Naṣrat Shāh's coins .. 36

There are no specimens, either for Naṣrat Shāh or Husain Shāh, from this find of the Mint *Muḥammadābād*, which may indicate some newly colonised portion of the old capital of Gaur at which Jalāluddīn Muḥammad Shāh (1415–1431) established a mint. For the commencement of the re-population of Gaur in the time of this King and various public works done by him there, *vide Riyāz-us-Salāṭīn* (Abdus Salām's *Biblio. Indica* translation, p. 118). Jalāluddīn was the son of Rājā Ganesh who probably minted coins for two years (1417-18) under the title of Danūjmarddana Deva 'the Lord who destroys Demons' (*i.e.*, apparently. his Muhammadan rivals). Most of these coins were struck at *Pandūnagar*, *i.e.*, Pandua. In the case of the Muḥammadābād coin of Naṣrat Shāh (I.M.C. No. 216) the date 934 is found, while, in the time of Husain Shāh, coins of this Mint have the dates 900, 909, 912, and 913 (I.M.C. Nos. 194–197).

III. 'Alāuddīn Fīrūz Shāh.

Naṣratābād. No date. Type as in B.M.C. No. 145, which, in turn, was modelled on a coin of Nāṣiruddīn—his father (B.M.C. No. 137 and I.M.C. No. 208).

In double circle with dots between.

Half moon at top of Reverse margin.

Obverse : as in B.M.C. No. 145.

Reverse : the same, for the first four lines, but there is an additional 5th line و سلطانه with نصرتاباد below.

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Wt. 161·4. Size 1·0 1

No mint or *date*. New type. In a plain area

Obverse.	*Reverse.*
السلطان بن	بن نصرتشاه
السلطان [بن] السلطان	السلطان [بن] حسين
علاؤ الدنيا و الدين	شاه [ا] لسلطان الحسيني
ابو المظفر فيروز	خلد الله ملكه
شاه السلطان	و سلطانه

Wts. 162·0 : 162·9. Size (both) ·98 2

Total of Fīrūz Shāh's coins .. 3

Fig. 7 shows a specimen of the last mentioned coins, illustrating crudeness of lettering, *e.g.*, the omission of ا in 3rd line of reverse, peculiar forked form of ال before حسيني, etc.

It should be noted that in B.M.C. No. 144 the mint and date are clearly shown in the Plate figure as عرصه ۹۳۹ and not نصرتاباد as stated on p. 52. The term '*Arṣah* (tract of country) is found in a Bengal coin of Jalāluddīn Muḥammad (A.H. 834) applied to Chatgānw (Chittagong) and before that to Satgānw (*e.g.* A.H. 790), and Kāmrū (A.H. 759). There is an unpublished coin in my possession of Nāṣiruddīn Naṣrāt Shāh bearing the same '*Arṣah* 939, so that possibly Naṣrat Shāh at the time of his death was on a visit to some tract of country (? Chittagong) of which his son, Fīrūz, was Governor. Fīrūz Shah obviously declared himself King from the same place but was shortly afterwards ejected from the throne and murdered by his uncle, Ghiyāthuddīn Maḥmūd, who had been previously allowed, *e.g.*, in 933 A.H., to strike coins in his own name during the life-time of his elder brother. A very crudely minted coin of Ghiyāthuddīn of the usual 'Badr Shāhī' type but bearing the Mint name '*Arṣah* and year possibly 399 (for 939) is in my own cabinet. Ghiyāthuddīn also copied (even to the half circle at the top of the side referred to in the I.M.C. as obverse but actually reverse) the first of 'Alāuddīn Fīrūz Shāh's coins mentioned above in his coin I.M.C. No. 217 (reproduced on Plate VI—I.M.C. Part II), which, as I pointed out in *J.A.S.B.*, Vol. VI, No. 4 (N.S.) pp. 162–4 (1910), has been wrongly described as a coin of Nāṣiruddīn. From the absence of date and similarity to 'Alāuddīn's coin, this coin of Ghiyāthuddīn is almost certainly also of 939 A.H.

IV. Ghiyāthuddīn Maḥmūd Shāh III.

Naṣratābād Date 939. Type as in B.M.C. No. 147 and I.M.C. Nos. 222–226 (the date in the description of the I.M.C.

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coin No 222 should be on the *Reverse*, and not on the Obverse, and there is a marginal circle as shown in Plate VII, Fig. 147 of the B.M.C.).

In at least one specimen نه of سلطانه و is missing and in another specimen the first ٩ of the date is *below* the ٣٩, instead of to the left.

Wts. 163·9 : 161 4. Sizes 1·0 : 1·06 3

Dār (*al-Ḍarb*). Date 933. As in previous coin, but different mint. The lettering in the last line is very crude and only *Dār* is certain.

Wts. 162·9 : 165·4. Sizes 1·0 : 1·06 2

No mint or date visible : same type 1

No mint or date. Type as in I.M.C. No. 228 but not quite such bold lettering. Reverse also slightly different in having the inscription in 4 instead of 5 lines : thus :—

السلطان بن

حسين شاه السلطان

خلد الله ملكه

و سلطانه

Wts. 161·4 : 159·8 Sizes ·93 : ·98 2

Total of Ghiyāthuddīn Maḥmūd's coins .. 8

V. Sher Shāh.

Agrah : 949 Square areas as in I.M.C. No. 615.

Wt. 178·0. Size 1·15 1

Agrah : 949. Square areas as in I.M.C. No. 618.

Wt. 176·45. Size 1·16 1

Bhānpur (?) : 949. As in I.M.C. No. 615 except for different mint and arrangement of date, the initial ٩ of the 100 being placed between the up strokes of the ل and ط instead of in the top left-hand corner.

Wt. 175·6. Size 1·08. 1

Chunār : 949. Modelled on I.M.C. No. 676 and 677 but with fuller inscription.

3

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Brought forward .. 3

Obverse.

In a circle the *Kalimah*: small 6-pointed star between the و and ل of رسول

Margin.

ابو بكر الصديق
عمر الخطاب
عسمان (*sic*) العارف
علي المرتضى
السلطان العادل M.M. No. 8

Reverse.

In a circle.
السلطان
شـــير شاه
خلد الله ملكه
و سلطانه

8-pointed star over ن in 1st line.

Margin M.M. No. 8 *Srī Ser Sāh* (in Hindi).

فريد الدنيا و الدين
ابو المظفر
ضرب چنار سنه ٩٤٩

Wt. 177·7. Size 1·18 1

Chunār: 949. Same as in the previous coin except for the following variations:—

Obverse.

Margin reads
العـــاد
الســـــلطان ل

and no M.M.

For similar coin of Jahānpanāh *cf.* the first one described below

Reverse.

In a circle: the first 2 lines read:
شاه سلطـــان
ســـــير

8-pointed star above the ن of سلطان. No M.M. in margin.

Wt. 177·6. Size 1·11 1

Fatḥābād: 949 and 951. Type as previously recorded by Nelson Wright (*J.R.A.S.*, 1900: p. 491). The word under the Kalimah on the obverse may be صاحبه in which case it might be linked up with the ابوبكر etc. in the margin to mean "the Companion (of Muhammad) is Abū Bakr," etc. etc. On the other hand in one specimen (reproduced as Fig. 8), a dot apparently converts the *hā* into *jīm*, which at first made the writer think that the word was ماجد (noble) and that it might be an ungrammatical qualifying word of Muḥammad. This, however, cannot probably be the case as the first letter seems clearly to be a *sād*. By the kindness of Mr. J. Allen (of the Department of Coins and Medals, British Museum), casts have been obtain-

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Brought forward .. 5

ed of 2 similar coins in the B.M. collection, but as they are apparently identical with the 2 specimens from the Raipārā find they throw no further light on the problem.

Wts. 177·84 : 177·0. Sizes 1·05 : 1·07 2

Fatḥābād : 946. Type as Thomas (*Chron.*, p. 395, No. 343, where it is described as unique), but slightly different from the latter in arrangement of Reverse and in possessing a mint name. This coin and the 2 now to be described must have been among the very first struck in Bengal after Sher Shah's defeat of Humāyūn at Choṇsa (*Safar*, 946 A.H. = June 1539 A.D.).

Obverse.	*Reverse.*
السلطان العادل	ابو المظفر
يـــــــد	الله
بتـــــــا	ـــــــشـــــاه
المؤئد الرحمن	ـــــــــير
فـــــــريد	سلطان خلد ملكه
الدنيا و الدين	و سلطانه
فتحا باد ٨٩	٩٤٦

Wts. 177·0 : 161·7. Sizes ·96 : ·9. Fig. 9 .. 2

Gwāliar ; 950. As in I.M.C. No. 623 and No. 625 but different date.

Wt : 177·2 : Size 1·23 1

Ditto : 951 and 952, but smaller coin

Wt. 177·8. Size 1·12 2

Jahānpanāh (Delhi) : 948. As in I.M.C. Nos. 628, 630 and 632 (*i.e.*, one with no mint mark and the other two with mint marks 6 and 7 respectively), No. 632 being a coin from the Belbārī find. It is to be noted that, on the Reverse, the last but one line of the square area, *viz.*, و سلطانه ٩٤٨, is separated from the Hindi inscription below, *not* by a line but by a prolonged سنه.

Wts. 174·7 : 174·3 : 176·7. Sizes 1·05 : 1·12 : 1·08 3

Jahānpanāh : 949. Identical with the coin figured by Thomas (*Chron.*, Pl. V, Fig. 179) but this coin is not described—the corresponding reference on p. 398 being to a coin of a different type. The type is similar to that of I.M.C. No. 676, but the latter has no mint name, and different mint marks.

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Obverse.

In a circle *Kalimah* with M.M. 6 between و and ل of رسول in the 2nd line.
Margin: M.M. 8 (inverted) علي M.M. 8 (inverted) ابابکر عمر عثمان السلطان العادل.

Reverse.

In a circle
(a) شـــاه
شيـــــير السلطان
خلد الله ملکه
و سلطانه ۹۴۹
(a)=M.M. 7
In *Margin*
فريد الدنا و الدين
ابو المظفر جهانپناه
Srī Ser Sāh (in Hindi).

Wts. 177·0: 176·1. Size (both) 1·2 2

Khalīfatābād (?): 951. As in I.M.C. No. 654 and Nelson Wright, *J.R.A.S.* (1900) p, 779: Plate II, No. 18. From Nelson Wright's figure the marginal reading at the bottom of the *Kalimah* side between the two M.Ms. seems to be clearly علي دار ضرب ? , and although the Raipārā coin is clipped at this place, the reading also appears to be the same. Further to the left, beyond the second Mint Mark, the reading of the Raipārā coin seems to be خليفتا باد which is in agreement with Nelson Wright's suggestion that the coin comes from a Bengal mint. It may also be noted in this connection that the mint *Khalīfatābād* had been in operation under Ghiyāthuddin Maḥmūd Shāh III within ten years previous to 951 (*vide* I.M.C. No. 225).

Wt. 176·4. Size 1·05 1

Satgānw: 950. Identical with I.M.C. No. 638, a coin which came from the Belbārī find. It is to be noted that the Reverse margin of both coins reads فريد الدين و الدنيا لبو

Wt. 177·1. Size 1·13 1

Satgānw: 850. As in previous coin, except that mint name on the reverse margin is between the Nāgrī inscription and date instead of the date between the Nāgrī inscription and the mint, *i.e.*, read: [*Hindi* etc.] ضرب ستگانو ۹۵۰ فريد

Wt. 161·98: 176·76. Size 1·06 (clipped): 1·10 .. 4

Sharīfābād (Burdwan): 948. Type as in I.M.C. No. 640 (which also came from the Belbārī find), the *Khalīfah's*

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Brought forward .. 23

names on the margin of the obverse running clockwise, instead of in a retrograde direction, as in B.M.C. Nos. 526–529, *i.e.*, علي is on the left and عمر on the right.

Wt. 176·7. Size 1·06 2

Sharīfābād: 949. As in description of I.M.C. No. 641, the date being *before* the Nāgrī inscription of the Reverse margin. In the illustration, however, in I.M.C. Pl. VIII the date *follows* the Hindi inscription, *i.e.*, it is between the Hindi and فريد although the coin is of the same year.

The use of the double circle type of coin at *Sharīfābād* may be compared with its occurrence at *Khalīfatābād*: *vide* coin of this mint and type previously mentioned.

Wt. 176·7 : Size 1·09 1

Shergarh: 948. Inscription in a double square as in I.M.C. No. 645, which is a coin from the Belbārī find. (The ornament in the right bottom corner of reverse area looks like a flying bird and may be a Mint Mark.)

Wt. 175·2. Size 1·08 1

Shergarh ʻurf Hadrat Dehli: 949. As in I.M.C. No. 652 (a coin of 951) but much better specimen. The reading of the right margin of obverse is العفان علي المرتضى. On the reverse area, the flower-like ornament above the خ of خلد is different from that on the I.M.C. coin and is somewhat similar to the ornament found in the same place on both the Agrah coins of 949 already described. It is, however, turned to the left instead of to the right.

Wt. 177·1. Size 1·13 1

Shergarh (?): 947. Type as in I.M.C. No. 615 and in the first of the Agrah coins of 949 just mentioned, but the mint is very doubtful, only the word گڑھ being certain.

Wt. 175·7. Size 1·2 1

Shergarh: 947. As in I.M.C. No. 627, but mint on left seems to be شير گڑھ and not جهانپناه. The coin is very similar to the Jahānpanāh coins of 948 of this find previously described, but has no M.M. in the loop of the ن in the top line of the reverse area.

Wt. 174·1 : Size 1·02 2

No Mint: 946 (3), 948 (2) and 952 (2). As in I.M.C. No. 655 (Var. α). It is to be noted that in all the coins

31

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Brought forward .. 31

(including that figured in I.M.C. Plate IX), there is some letter after فريد on the right hand margin of reverse.

Wt. 175·7–176·8. Size 1·06 7

No Mint: 947 (? 6) and 948. As in I.M.C. No. 659, (Var. *β*), being chiefly different from the previous coins in not having a duplicate شاه in the first line of reverse. Differences from the coin of the Belbārī find, figured as No. 659 of I.M.C. Pl. IX, are :—

(*a*) two *triangular* groups of 3 dots in the last line of reverse : instead of 3 in a straight line.

(*b*) the reading of right margin of reverse is حضرة بلد, which looks as if an ignorant mintmaster had got muddled between 2 different models, one with فريد الدنيا, and the other having حضرت بلد, followed by mint name.

(*c*) the addition of ? لله after الدنيا in bottom reverse margin

Wts. 177·66 : 177·0. Sizes 1·02 : 1·04 .. 2

No Mint: 948. Similar to I.M.C. No. 664 which came from the Belbārī find, but the bottom margin, which is almost cut off, seems *not* to be the usual الدنيا. Possibly by error of the press, the سنه and Nāgrī inscription at the bottom of the square area of reverse has been omitted from the description of the reverse of the I.M.C. coin.

Wt. 173·9. Size 1·02 1

All the above 10 coins almost certainly were minted in Bengal, the mint being possibly Fatḥābād : *cf.* Nelson Wright, *J.R.A.S.*, 1900, p. 491 and Pl. I, Fig. 21.

No Mint: 949. As in I.M.C. Nos. 668 and 669. The Raipārā coin differs from the last mentioned coin, which came from the Belbārī find, in slight differences of lettering as well as in having the Catherine-wheel Mint Mark No. 6, between و الدين and ابو المظفر on the right reverse margin, instead of to the left over the نيا of الدنيا. There is also an inverted Trident M.M. over the ف of ابو المظفر. A further very important difference (but one not noted by Nelson Wright in the I.M.C. description) is that the margin of the Belbāri coin has *no* Hindi inscription after the date on reverse, but, instead, there

Carried over .. 41

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Brought forward .. 41

is some mint name (?? Lakhnautī). The Raipārā coin *has* the usual Hindi inscription after the date, like I.M.C. No. 668.

Wt. 176·6. Size 1·1 1

No Mint: 949 (1), 950 (1) and 952 (2). As in I.M.C. Nos. 668, 670 and 671. The inscriptions are the same as in the previous coin except that on the obverse they have the M.M. No. 4 over عثمان in the margin of obverse, and the same M.M. in the loop of the ن of الدين in the margin of reverse. The inverted Trident M.M. is also found on the reverse, but over the ر of ابو. These coins are larger than the previous one, and differ slightly from one another in lettering and size of central circle of obverse.

Wts. 177·1 : 178·0 : 178·0 and 177·5. Sizes 1·28 : 1·26 : 1·32 and 1·35 4

No Mint: 951 (2) and 952 (1). As in I.M.C. No. 675, the Solomon's Seal M.M. being between the date and فريد, instead of (as wrongly stated in I.M.C.) before the date.

Wts. 177·0 : 177·4. Sizes 1·05 : 1·18 3

No Mint: 949 and 950. Identical with the previous 3 coins except that, instead of the Solomon's Seal M.M., there is a new M.M. shaped like an ع between the date and فريد. In the obverse margin of one of the coins there is an additional ل after العادل and a superfluous ا after ابا of ابا بكر (*vide* Fig. 10 (*a*)).

Fig : 10 (*b*) shows the reverse of the other and better coin.

Wts. 177·2 and 178·0. Sizes 1·05 and 1·1 .. 2

Total of Sher Shāh's Coins .. 51

VI. Islām Shāh.

Apart from 17 specimens of the commonest type of this King (*viz.* : I.M C. No. 804 without Mint name ; 1 from Gwalior of 952 (as in I.M.C. No. 786 but with difference, *e.g.*, instead of star in left bottom corner of obverse a mark like a flying bird), and 1 of 952 from Shergarh (Delhi ?)—also with the new flying bird mark (over the ر of رسول) of the obverse), the majority of the 54 coins of Islām Shāh that occurred in the Raipārā

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find seem to have been struck in Bengal, and constitute a valuable addition to our knowledge of Bengal numismatics during the reign of this King. The following are the details of these coins under their respective mints, with a few notes on those in which no mint name is found.

Fatḥābād 952. Type a curious hybrid between the Satgānw coin of 952 (I.M.C. No. 796 from Belbārī), and the coin without mint name of 954, or more probably 952 (I.M.C. No. 803). As the latter more closely resembles the coin now described, it probably was also minted at Fatḥābād.

Obverse	*Reverse*
In a circle the Kalimah	In a circle
M.M. 8 at end of last line	شـــاه اسلام ابن شيـــر شاه الله سلطان خلد ملكه و سلطا و اعلى (ا)مره نه
Margin.	
ابا بكر عمر عثمان علي السلطان العادل	*Margin.* reading counter-clockwise. After Hindi, ضرب فتحاباد ٩٥٢ جلال الدنيا و الدين ابو المظفر
No. M.M.	No. M.M.

A specimen of this coin is reproduced as Fig. 11 to enable comparison to be made with the reproductions of I.M.C. No. 796 and 803 on Pl. XII of I.M.C.

Wts. 176·7 and 177·1. Sizes 1·10 and 1·16 .. 2

Fatḥābād: 952. As in the previous two coins except for the interposition of a new mint mark of nine squares between the date and جلال on the reverse margin. The ا of امرہ is also not missing. Fig. 12 shows the reverse of this coin.

Wt. 177·36. Size 1·19 1

Fatḥābād: 952. Exactly as in the previous coin except that the marginal inscription is twisted round the central inscription by 180°, the mint mark thus appearing at 2 o'clock instead of 8 o'clock.

Wt. 177·46. Size 1·21 1

Fatḥābād: 952. As in I.M.C. No. 803, but differing from the latter in not having the Solomon's Seal M.M.

Carried over .. 4

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Brought forward .. 4

between the date and جلال on the margin of reverse, and in having فتحاباد instead of اعلی امرہ و as the last line of the central reverse inscription. Fig. 13 shows the reverse of this coin.

Wts. 117·6 and 158·4 (probably clipped). Sizes 1·2 and 1·12 2

Gwāliar: 952. As in I.M.C. No. 786 but instead of star at left bottom corner of obverse there is a mark like a flying bird. Also, on reverse, 3 dots over خ of خلد.

Wt. 176·6. Size 1·1 1

Satgānw: 953. Type as in I.M.C. No. 797 (a Belbārī coin): but there is no سنه under date on obverse, and reverse margin is differently arranged. The coin is apparently the same as the coin now in the Madras Museum described by Rodgers, *Indian Antiquary*, No. 17 (1888) p. 67, and figured as No. 20 in his Pl. II.

Wt. 176·5. Size 1·14 1

Satgānw: 952 (3) and 953 (1). As in Rodgers No. 19 (Madras Museum).

Wts. 177·4; 177·06: 176·88 (953 coin). Sizes 1·14: 1·16: 1·12 (953 coin) 4

Satgānw: 952. As in I.M.C No. 796 (a Belbārī coin) Wt. 177·06. Size 1·16 (specimen sent to Dacca Museum) 8

Sharifābād: 952 (8) and 953 (3). As in No. 917 of Lucknow Coin Catalogue, the type of which is directly derived from Sher Shāh's Sharifābād coin described and figured as I.M.C. No. 641.

Obverse	*Reverse*
In a double circle the Kalimah.	In a double circle شاه اسلام سلطا ابن شیر شاه سلطان خلد الله ملکه

Carried over .. 20

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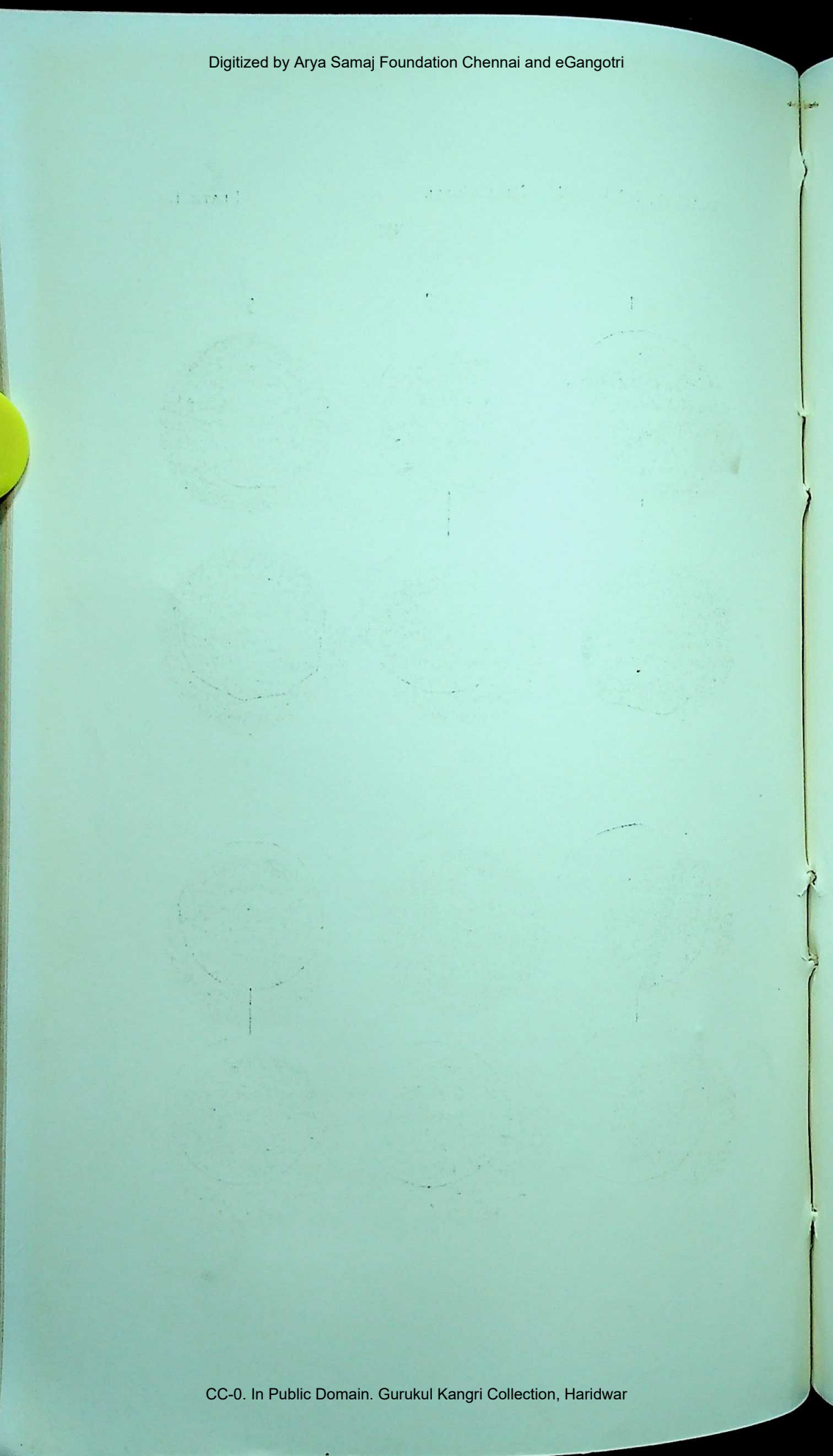

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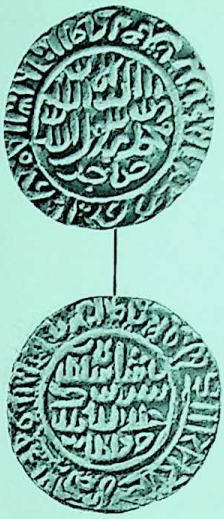
8



10(*a*)

12

10(*b*)

13

9

11

14

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Brought forward .. 20

Margin
السلطان العادل ابو بكر عمر
عثمان علي
M.M. between علی and السلطان resembling M.M. No. 6 but with knobs on each of the 6 points.

Margin. At bottom (in almost Bengali characters).
Srī Islām Sāhī ৭৫২.
To left, before শ্রী (reading clockwise, and the tops of the letters facing inwards).
جلال الدنيا و الدين ابو المظفر شريفا باد

Wts. 177·58 (Fig. 14) : 177·36 ; 177·0 : 177·3 (the last 2 being coins of 953). Sizes 1·14 (Fig. 14) : 1·17: 1·15 (both 953 coins) 11

Shergarh (Delhi ?) : 952. Type as in I.M.C. No. 780 : but, instead of star in left-hand bottom corner of obverse, an elaborate M.M. similar to M.M. No. 8 but with 3 loops on the top : also an adjacent mark under the ر of رسول similar to a flying bird. The second portion of the mint name at the bottom margin of reverse is almost entirely cut off, but may be دهلی.

Wt. 177·68. Size 1·1 1

No Mint : 952 (or 4). As in I.M.C. No. 803.

Wts. 176·98 : 176·66. Sizes 1·25 : 1·26 .. 2

No Mint : 952 (or 4). As in the previous coins, but the date is inverted so as to read in continuation of the quasi-Bengali inscription in which, as in the other coins of the same sort, the name of the King is written ইস্‌লেম

Wts 176·7 : 178·0. Size (both) 1·26 2

No Mint : 952 (or 4). As in the two last but one coins, but no Mint Mark on the margin of obverse.

Wt. 176·7. Size 1·27 1

No Mint : 952 (9) and 953 (8). Common type, as in I.M.C. No. 804. The number at the top seems to ١٣٧٧, and not ٣٧٧ as suggested by Thomas (*Chron.* p. 411) and Blochmann, *J.A.S.B.*, 1875, p. 298. If so, it cannot be the chronogram for آية الله (The Sign of Allāh).

Wts. 176·9 (952 coin) : 176·8 : 177·1. Sizes ·3 (952 coin) 1·3 : 1·26 17

Total coins of Islām Shāh .. 54

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6. I have to express my best thanks to Maulvi Maqbūl Aḥmad, M.A., Lecturer, Presidency College, for assistance in dealing with this very important find of coins: as well as to Major M. Stagg, O.B.E., R.E., Mint Master, Calcutta, not only for the weights that are quoted in the paper, but also for having the specific gravity of nearly two dozen selected coins determined, with a view to ascertaining their silver content.[1]

The cost of the two Plates that illustrate this paper has been generously met by the Government of Bengal, who also permitted the retention of a selected number of coins for further study after the official report on the find had been submitted.

WRITERS' BUILDINGS,
CALCUTTA, H. E. STAPLETON.
29*th October*, 1929.

[1] When the paper was first prepared, it was thought that the silver content of the coins could be deduced from the Specific Gravity on the assumptions that—as the coins were not brittle—no lead could be present, and that, apart from traces of gold, the only other metal likely to be present would be copper (Sp. Gr. 8·92). Hence the Specific Gravity method seemed likely to provide an easy way of comparing the standards of purity observed in Bengal during the reigns of different Kings. As, however, doubts were thrown on the validity of this method at the meeting of the Numismatic Society of India held in Calcutta on December 22nd, 1929, the opportunity was taken of the return to me from various Museums of six coins from the Raipārā find to have these (as well as two Delhi coins of 'Alāuddīn Khiljī dating from *c.* 700–715 A.H.) assayed at the Bombay Mint. The annexed table summarises the results of the assay and also gives the silver content as calculated from the Specific Gravities.

From this table it will be seen that the percentage of silver, as calculated from the Specific Gravity, is almost invariably lower than the actual silver content as shown by the assay. As the first two coins are almost pure silver their specific gravity should approximate to that of pure silver, *viz.*: 10·51, while the specific gravity of No. 1 should be slightly greater than No. 2. The low actual specific gravity of No. 1 may, of course, be due to air holes: but the figures in the last column clearly show that the Specific Gravity method of calculating the silver content is entirely unreliable.

The explanation (as Dr. W. A. K. Christie of the Geological Survey of India suggests) is the fact, not previously known to me, that the Specific Gravity of *cast* silver varies from 10·424 to 10·511 owing to minute air cavities by which the density is apparently reduced. The presence of even traces of other metals may also introduce a further possible error, *viz.*: that the volume of the alloy need not necessarily be the same as the volume of the constituent metals. Finally, without a complete assay, it is not known what metals, other than gold and copper, are present.

I have to express my indebtedness to Dr. Christie for his careful discussion of the subject; to Major Stagg for kindly arranging for the eight coins to be assayed; and, lastly, to Mr. K. C. Ray, late Additional Assistant Director of Public Instruction, for calculating the percentage of silver from the specific gravity of the selected coins.

H. E. S.—2-7-1930.

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APPENDIX

Results of Assay of Selected Coins, and calculation of Silver content from their Specific Gravity

Name of King	Mint and Date (A.H.)	Specific Gravity	% Silver (Assay)	% Silver (calculated from Specific Gravity)
1. 'Alāuddīn Muḥammad Khiljī (of Delhi).	? Haẓrat Delhi. No date.	10·34	99·14	90·8
2. Ditto. ..	Dār al-Islām *c.* 700–715	10·42	99·08	95·1
3. Ḥusain Shāh (of Bengal).	Ḥusainābād. No date	10·38	96·30	93·0
4. Naṣrat Shāh .. (do.)	*Dār al-Ḍarb* Fatḥābād (Farīdpūr). 925	10·44	95·36	96·3
5. Maḥmūd Shāh (III).				
(do.) ..	Naṣratābād.... 933	10·41	98·72	94·6
6. Sher Shāh ..	Satgānw... 950	10·40	98·58	94·1
7. Islām Shāh ..	Satgānw.... 952	10·44	98·70	96·3
8. Ditto. ..	Sharīfābād.... 952 (Burdwān).	10·41	98·56	94·6

All the coins were reported to contain traces of Gold and Copper. The Specific Gravity of pure Silver is 10·51.

284. Notes on a few rare Indian Coins.

The object of these notes is to give a short description of some rare Indian coins which have come into my possession at various times.

I do not pretend that all the following coins are unpublished or unique, but many of them I have been unable to trace elsewhere, though I must say that I have never had the opportunity of inspecting the large public and private collections in India and elsewhere.

I have arranged the coins roughly in chronological order in dynasties and states.

In my estimation, the most interesting piece is the Shāh 'Ālam II copper of Najībābād (No. 9); this I believe is, for the

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three reasons set out below, a standard weight, used at that mint for a double Rupee

Najībābād, as is well known, issued a few double Rupees, one or two of which are in the British Museum (see B.M. Catalogue, Pl. XXIX, No. 1200), and it is probable that a standard weight was kept in the mint especially for an unusual denomination.

My reasons for the above statement are shortly as follows:—

(*a*) It weighs 348 grs. which is exactly the weight of the double Rupee illustrated in B.M.C. No. 1200.

(*b*) Its style is entirely unlike that of the usual copper coins of this mint, though it corresponds fairly accurately with the above-mentioned silver coin. The copper coins are almost without exception of non-couplet type and nearly always fairly rough in style.

(*c*) Its peculiar shape, which is obviously intentional, was probably intended to prevent any possibility of this piece being confused with the ordinary copper coins and issued as currency. Each edge is carefully bevelled up to a well-defined ridge which runs down the centre of each edge. The side view of this piece appears thus

There may, of course, be another explanation which will fit this piece equally well, but it seems reasonable to hold that the above points support my theory.

I will now give a short description of the remainder of the thirteen pieces, each piece being catalogued at the end of these notes.

Sultāns of Dehli.

1. Muḥammad Bin Sām, Billon. 55. The obverse type of this coin, though barbarous, appears to depict an elephant; at least, it resembles an elephant more than any other quadruped, the trunk and tusk being visible. The Nāgari legend above this type I have been unable to read, the first character being possibly Śrī. I have not seen this type figured before. I have another specimen completing the legend.

2. Quṭbu-d-dīn Aibak (?) Æ. 55.

This coin apparently bears the word قطبے on both sides in a circle (see Valentine, The Copper coins of India, vol. ii, Nos. 121/122), while those in the above reference have the well-known type of humped bull, but the rayed circle differs.

Governors of Bengal.

3. Ġhiyāsu-d-dīn 'Iwaẓ, AR. Rupee A.H. 616, 19th day of the Month Ṣafar, but no mint.

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This coin has an unusual marginal legend as follows:—
بتاريخ التاسع عشر (ضرب ؟) الصفر سنة ستة (sic) عشر ستمائة

which gives the date of the day of the month and the year but does not give the mint.

I have been unable at present to find any definite information as to why this particular day was so commemorated, but this ruler's career was somewhat chequered. He commanded in Deokot in A.H. 608 and shortly afterwards assumed the Royal Powers. He submitted to Altamsh the Sultan of Dehli in A.H. 622 but almost at once revolted and was defeated and slain by Nāṣiru-d-dīn Maḥmūd in A.H. 624.

Mughal Emperors.

4. Akbar, Æ. half Dām Burhānpūr Ilāhī 4x Bahman.

This is a very rare coin and is in fairly good preservation but unfortunately the unit of the date is illegible.

5. Aurangzeb 'Ālamgīr I, Æ. Paisa Ūdaipūr A.H. 108x.

This coin is in poor state and partly illegible but the letters [ر] دیپو [او] seem reasonably certain and I think this coin can be safely attributed to Ūdaipūr, but so far I have not found any reference to this mint having been in operation during the reign in question. Unfortunately on the plate, the cast has been slightly misplaced. Jahāngīr and Shāh Jahān coined a few rare copper pieces at Ūdaipūr, one of the latter being illustrated in the Punjab Museum Catalogue, and it is probable that Aurangzeb coined in this mint at least in the early part of his reign.

6. This is a half Paisa of Aurangzeb 'Ālamgīr I struck at Mailāpūr. Rodgers published another coin something similar to this in JASB, 1895. "Mogul Copper Coins." Coins of this mint are, I believe, very rare, especially in copper.

7. A half Rupee of Muḥammad Shāh, date A.H. 115x, RY27, which I think can be definitely attributed to Jahāngīr-nagar mint. The letters [جہانگیر نگر] are visible and I think the top of the ج can also be faintly seen on the actual coin. The five-pointed star mark to the right and above سنة is a mark used by this mint. I have not seen any mention of a half rupee of this mint and reign elsewhere.

8. Aḥmad Shāh Bahādur. Half rupee of 'Aẓīmābād mint A.—1166, RY6. Like other half rupees of this mint of the two immediate successors of Aḥmad Shāh (see I.M.C. No. 2209 'Alamgīr II and no. 2267 of Shāh Jahān III), the mint-name is off the flan, but the Triśūl mark is a certain indication of the mint.

9. Shāh 'Ālam II-double-rupee weight; noticed, above.

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Mahārānās of Dholpūr.

10. Kīrat Singh, A/ Muhar struck in the name of Muhammad Akbar II, A.H. 1252, RY. 31. This coin, as far as I am aware, is quite new. Webb in the 'Currencies of Rajputana' has stated that "Silver only has been coined in this state". This coin is obviously genuine and compares pretty closely to the Rupee Webb; Pl. XII. 12 Marks Chhātā (obv.) and Tamanchā (rev.); but this coin lacks the triple bow shown on the above Rupee. The coins of this state are now rather uncommon, I believe, and gold coins of the native states of Rajputāna are rarely met with except some varieties of Jaipūr.

Mahārāo of Būndi.

11. This is a four Anna piece of Rām Singh with the name of the Queen Victoria, A.D. 1858, S. 1915. Webb in the 'Currencies of Rajputana' makes no mention of this denomination and it is also absent from the British Museum collection. For the type compare Webb Pl. VIII. 4.

Mahārājās of Mārwār (Jōdhpūr).

12. This is a very rare and interesting coin and I believe unpublished in this metal. It is a A/ Muhar struck by Sardār Singh with the name of King Edward VII. The flan is unfortunately small and I have not been able to elucidate the whole of the legend though I am much indebted to Mr. J. Allan of the British Museum for his valuable help. The British Museum possesses some fine copper coins of this reign, but no gold or silver. It is unfortunate that the obverse legend of this coin is differently arranged from that of the copper coins. To the left of the *Jhār* and above it is apparently مبار of مبارک while the ک is below the برمان at the top. There is also a part of another word below مبار which may be the ستان of هندوستان or انگلستان while below the words امیر هند ..... seem fairly legible. The larger copper coins read in the bottom line امیر انگلستان و هندوستان.

I might mention in passing that the British Museum possesses three silver pieces with the name of King George V, namely 8, 4, and 2 Annas sizes.

Manipūr.

13. This is a square Rupee of rather heavy weight (188·4 grs.) struck by Candrajita Simha in S. 1734 (A.C. 1812). This is a rare and unusual piece something similar to the two earlier Muhars of Gaura Simha published by Marsden, Pl. III,

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Nos. MCC◡ XXII and MCC◡ XXV, dated respectively S. 1684 and S. 1694, and I am again much indebted to Mr. J. Allan for deciphering the legend. This coin is a great improvement on the usual small base silver uniface pieces assigned to Manipūr.

I append below a list of the coins in numerical order as I believe this is easier for reference.

In conclusion, I wish to thank Mr. J. Allan of the British Museum for kindly supplying the casts and also Mr. H. Nelson Wright for his help in revising this paper.

SULTĀNS OF DEHLĪ

1. MUḤAMMAD BIN SĀM

Obverse	*Reverse*
Rude figure of elephant to left above. (?)Śrī....in Nagari.	السلطان الاعظم معز الدين [محمد بن سام]

Billon. 55; weight 44·5 grs.

2. QUṬBU-D-DĪN AIBAK (?)

Obverse	*Reverse*
Within rayed circle قطبے	apparently the same as Obverse.

Æ. 55; weight 29 grs. Cf. Valentine, Vol. II, Nos 121-122.

SULTANS OF BENGAL

3. GHIYĀSU-D-DĪN 'IWAẒ

Obverse	*Reverse*
Within double circle, the outer consisting of dots and the inner being linear, The Kalima.	السلطان المعظم غياث الدنيان و الدين ابو الفتح عوض بن الحسين ناصر امير المومنين
Margin, between inner circle and outer circle of dots بتاريخ التاسع عشر برد (?) الصفر سنة ستة (*sic*) عشر ستمائة	

Æ Rupee, 1·05; No mint. A.H. 616 the 19th day of Ṣafar weight 164 grs.

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MUGHAL EMPERORS

4. AKBAR

Obverse	*Reverse*
برهانپور	... ۴ الهی
فلوس	ماه بهمن
.....	

Æ ½ Dam. 65, Burhānpūr, Ilāhi 4× Bahman, weight 163 grs.

5. AURANGZEB ʿĀLAMGĪR I

Obverse	*Reverse*
۱۰۸ ...	.....
سنة	مبارك
[او] دیپو [ر]	جلوس
....	

Æ Paisa. 8 Ūdaipūr A.M. 108 × RY— weight 212 grs.

6. AURANGZEB ʿĀLAMGĪR I

Obverse	*Reverse*
عالمگیر	میلا پور
شاه	.....
[فلو] س باد	

Æ ½ Paisa. 7, Mailāpur A.H.—RY— weight 95 grs.

7. MUḤAMMAD SHĀH

Obverse	*Reverse*
	مانوس
... ۱۱۵ محمد شاه	میمنت
بادشاه غاز	۲۷ سنة جلوس
.....	ضرب
.....	[جه] انگ [یر نگر]

Æ ½ Rupee. 65 Jahāngīrnagar A.H. 115 × RY. 27. weight 89 grs.

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8. Aḥmad Shāh Bahādur

Obverse	*Reverse*
بهـــا [در]	[عظيم اباد
[با] دشاه غاز	ضرب]
١١٦٦	ميمنت مانوس
[سكه] مبارك	[جلو] س ٦
	ســـنـــة

AR ½ Rupee 'Aẓīmābād A.H. 1166 RY 6 weight 89.5 grs.

9. Shāh 'Ālam II

Obverse	*Reverse*
... محمد شاه عالم با [د]	نجيب اباد
شـــــــــــاه	ضرب
[سا] يه [فض] ل حامي (دين ٢٠٨ [١]	ميمنت مانوس
ســـــــــكه	[جلو] س ٣٤ع
[زد بر هفت] كشور	ســـنـــة

Æ Square. 8 Double-Rupee-Standard-weight. Najībābād A.H. 1208 RY 34. weight 348 grs. Bevelled edges thus

MAHĀRĀNĀS OF DHOLPŪR

10. Kīrat Singh in name of Muḥammad Akbar II

Obverse	*Reverse*
محمد اكبر ٢ [١٢] ...	مانوس
صاحب قر	ميمنت
	٣١
سكه	سنة جلوس
	.....

AV Muhar. 7 [Gohad] A.H. 1252 RY 31. weight 165 grs. mint mark, chhātā (Obverse), Tamanchā (Reverse).

MAHĀRĀOS OF BŪNDI

11 Rām Singh with name of Queen Victoria

Obverse	*Reverse*
[VIC]	[बुं]दीश
[T]OR[IA]	[रा]म सिंह
QUEE[N]	[१]९१५: :
1858	

AR 4 annas. S·6 in: A.D. 1858 S.1915. Weight 42 grs.

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MAHĀRĀJĀS OF MĀRWĀR (JODHPŪR)

12. SIRDĀR SINGH with KING EDWARD VII

Obverse	*Reverse*
ک برمان	श्री माताजी
	۲۲
ایدورد مبار	بهـــــا [در]
...س	[دیرا] ج سر دار سنگ
ســـتـــان	مهاراجه
امیر هند	[جو] د [ه] پور
.....	

AV Muhar. S·75 in: Jodhpūr S—Weight 168·5 grs. (has been mounted)

MANIPŪR

13. ÇANDRAJITA SIṂHA

Obverse	*Reverse*
Legend in four lines within square lines border	In four lines as on obverse
(1) Śri-mat Manipure.	(1) Śrī-mad Rādha Go-
(2) śvara Śrī Çandrajita	(2) vinda padan vi-
(3) Siṃha nṛpavara-	(3) nda makaranda ma-
(4) sya Śāke 1734	(4) no madhukarasya

AR □ Rupee. S·85 in. Ś.1734=A.C. 1812. Weight 188.4 grs.

London, 1929. P. THORBURN.

285. ĀNDHRA COINS IN THE LORD IRWIN AGRICULTURAL MUSEUM, KOLHĀPŪR.

(*A Paper read before the Numismatic Society of India at Bombay on the 6th June, 1929.*)

1. In the year 1877 a hoard of coins was found at Brahma-puri near Kolhāpūr, while excavating for the bridge over the river Pañchagangā. Some of them were sent to the Bombay Branch of the Royal Asiatic Society, and some to Rāo Sāheb Maṇḍlik, and all of them were examined by Pandit Bhagavānlāl Indraji, who published an article on these coins in the Journal of the Bombay Branch of the Royal Asiatic Society, Vol. XIII. P. 307. Some more were distributed to various other Museums, where they were examined by Messrs. Cunningham, Codrington, Pearse, and Burgess. The remaining coins are now exhibited in the Lord Irwin Agricultural Museum, Kolhāpūr.

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2. These coins fall naturally into two groups, *viz.*:—those of copper called *Potin* by Dr. Bhāndārkar, an alloy of copper and tin, and those of lead. The so-called potin coins were analysed chemically by Dr. S. V. Shāh, Ph.D., Professor of Chemistry, Rājārām College, Kolhāpūr, and were found to contain nothing but copper. The coins can further be subdivided into Śātavāhana Coins and Kolhāpūr Coins. The Śātavāhana Coins bear on the obverse an ornamented elephant with its uplifted proboscis on which are the legends Śiri Puḷumāvisa, Śiri Satakarnisa, Śiri Satasa, and Śiri Yaj̃ña Satakarnisa; and on the reverse they bear the Ujaini cross and balls. One particular type requires special mention here. Some of the coins of Pulumāvi bear on the reverse a crescent, on the Uj̃jaini symbol.

In the second division are included the coins of Vāsishṭhī-putra Vilivāyakura, and Gotamī-putra Vilivāyakura. These coins bear on the obverse a bow, with its string downwards, fitted with an arrow pointing upwards surrounded by a legend in Brāhmi, Rāño Gotamī puttasa Vilivāyakurasa, and Vāsiṭhī-puttasa Vilivāyakurasa, and on the reverse they bear a Chaitya surmounted by a Bodhi tree, on the left side of which is a Nandi—pāda (the head of a trident below which is a circle, the mark of a Buddhist wheel).

3. The lead coins contain the names of three kings only *viz.*:—

(*a*) Vāsishṭhī-putra Vilivāyakura,
(*b*) Māḍharī-putra Sivalakura, and
(*c*) Gotamī-putra Vilivāyakura.

These coins may be classified thus:—

(1) Coins bearing on
obverse—a bow with its string downwards, fixed with an arrow pointing upwards surrounded by the legend Rāño Vāsiṭhī-puttasa Vilivāyakurasa.
reverse—a Chaitya of four tiers, with a dot in each arch, surmounted by a crescent, standing, together with a tree on left, within a railing ornamented with scroll and dots; above Svastika, (as in Prof. Rapson's Catalogue of Coins No. 16.) No. 1 of the plate.

(2) Coins bearing on
obverse—a bow and an arrow as in No. 1 and the legends.....vāsiṭhī-pu.....
....., and Rāño Mādharī-puttasa.....
valakurasa; and an effaced bow is seen in an oblique position,
reverse—Chaitya etc. as in No. 1, with traces of another Chaitya with dots in the arches beneath the railing.

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They are the coins of Vāsishṭhī-putra Vilivāyakura restruck by Māḍharī-putra Sivalakura, (as in Prof. Rapson's Catalogue Nos. 25, 29 and 30.)

(3) Coins bearing on
obverse—a bow and an arrow and also the legend as in No. 1;
reverse—Chaitya and crescent as in No. 1, but the tree is on the right.

(4) Coins bearing on
obverse—a bow and an arrow as in No. 1, surrounded by the legend Rāño Māḍhari-puttasa Sivalakurasa;
reverse—Chaitya, crescent, and Bodhi tree as in No. 1.
These coins are perfectly cylindrical, while the others have all sloping edges.

(5 Coins bearing on
obverse—a bow and an arrow as in No. 1, and the legend as in No. 4;
reverse—Bodhi tree is on the right of the Chaitya.
The coins with Nos. 4 and 5 are very much worn showing thereby that the currency was in long continuance. These are smallest in size.

(6) These are of the same size as Nos. 4 and 5 and bear on
obverse—a bow and an arrow as in No. 1, surrounded by the legend Rāño Gotamī-puttasa Vilivāyakurasa,
reverse—a Chaitya of four tiers surmounted by Svastika, and Bodhi tree on left, within a railing ornamented with scroll and dots.

(7) These are the double struck coins of Gotamī-putra. They bear on
obverse—the usual bow and the arrow surrounded by ..... Gotamī-puttasa Vili ..... and Rāño Gotamī puttasa Vilivāyakurasa.
reverse—Chaitya is seen obliquely twice.
No. III of the plate.

(8) These are a little larger than those in No. 6 above; they bear on
obverse—the same as in No. 6,
reverse—Bodhi tree is on the right (as in Prof. Rapson's Catalogue Nos. 47-51).

(9) These are similar to those in No. 8. But on the reverse traces of a railing in a previous striking are visible.

(10) These are of Vāsishṭhī-putra Vilivāyakura restruck by Gotamī-putra Vilivāyakura. They bear on

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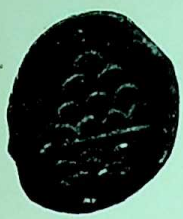
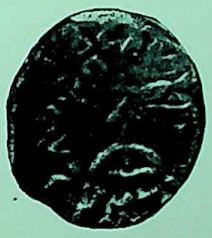


1

2



3

4

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obverse—the legends.....siṭhi puttasa..... ....and Rāño Gotamī-puttasa Vilivāyakurasa, and on
reverse—the confused images of two Chaityas. No. II of the plate.

(11) These are the coins of Māḍharī-putra Sivalakura restruck by Gotamī-putra Vilivāyakura. They bear on
obverse—the usual bow and arrow surrounded by the legends Rāño Māḍharī-puttasa....., and Rāño Gotamī-puttasa Vilivāyakurasa, and on
reverse—confused images of two Chaityas and two trees.

(12) These are the coins of Vāsishṭhi-putra Vilivāyakura restruck by Māḍhari-putra Sivalakura on the reverse, and further restruck by Gotamī-putra Vilivāyakura. They bear on
obverse—The usual bow and arrow, and also the faint marks of a bow and a Chaitya surrounded by the legends.....siṭhi-pu....., and Rāño Gotamī-puttasa Vilivāyakurasa, and on
reverse—confused images of Chaitya and bow surrounded by the legend.....Māḍharī-puttasa.
No. IV of the plate.

(13) The No. 12 coins give a clue to the existence of coins of Vāsishṭhi-putra Vilivāyakura restruck by Māḍharī-putra Sivalakura on the reverse.

4. Pandit Bhagavānlāl in his article on the Kolhāpūr-coins says that the beauty of the coins gradually merges into ugliness on account of the carelessness of the die-cutters. I beg to differ from the Pandit in regard to these coins. His opinion may be correct in the case of the others. But the coins of Gotamī-putra Vilivāyakura, which are quite fresh as if just coming out of the mint, are very well struck and very well preserved. The Chaitya, the tree, and the Svastika are very beautiful on the reverse. The letters in the legend on the obverse are more beautiful than those in the coins of the other kings. They are superior even to the letters in the coins of the Western Kshatrapa kings. The die-maker, it seems, had taken special care in chiselling out the letters, and also in designing the Chaitya and the tree; otherwise they would not have come out so very clear and beautiful.

5. Coins of Nos. 1, 4, 5, and 6 are of the smallest size, and have the tree on the left. Coins numbering 3, 5, and 7 bear the tree on the right. The photograph shows the increase in size of the restruck coins as they are of a soft metal. The size is still further increased when restruck a second time as in

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the case of the coin No. 12 above. There are however, exceptions to this. Coin number 23 of Prof. Rapson's Catalogue though not showing any signs of restriking is naturally of the size of once restruck coins. Coins numbered 15, 22, and 25 of the same Catalogue show marks of restriking, and yet have the tree on the left. No hard and fast rules can, therefore, be deduced as regards the size of the coins. The position of the tree will be considered later on.

6. From the present available sources, the history of these coin-strikers can-not be traced. No inscriptions giving the names of Vilivāyakura and Sivalakura have been found. Nor do the Purāṇas give the names of these kings. It cannot also be said with certainty whether any inscriptions can be found if excavations are undertaken at Brahmapuri. Leaving this question aside, this much can be said from the coins themselves that these kings were Buddhists by religion. Some of the Āndhra Coins of Satakarni, Pulumāvi, Siri Yajña-Satakarṇi etc. bear on the obverse, unlike these coins, ornamented elephants with uplifted proboscis and horses. Some of the Vāsishṭhi-putra Pulumāvi's coins and those of Siri Yajña-Satakarṇi bear on the obverse a Chaitya and beneath a waved line. The adoption of the Chaitya on the latter coins can be traced to the influence of the Kshatrapa type. For, Pulumāvi married the daughter of Rudradāman (a Buddhist), and she was the mother (probably) of Siri Yajña Satakarṇi. On all the Kshatrapa coins are the Chaitya, the sun and the moon. Wherever the Kshatrapa influence has over-weighed, therefore, these kings have adopted the Chaitya and the crescent for the symbol, and in its absence they have stuck to their own. We may stretch our imagination a little further and say that Pulumāvi fighting with his father-in-law, Rudradāman, lost the greater part of his kingdom in the north-west. In anger he left out, therefore, the Chaitya in his coins, and out of love for his wife retained the crescent only, which is seen on the reverse of his coins above the Ujjaini symbol. The influence of the dowager queen mother is generally felt by a young king; and Siri Yajña-Satakarṇi could not have been an exception to it. A majority of his coins bear a chaitya on the reverse. It seems, that he was able to do away with it only after her death.

In the Matsya Purāṇa the Āndhras have been called Śūdras. The Kshatrapas were Parthians, and the Vākāṭakas, who were related to the Guptas, have been called in the Ajaṇṭā Inscription "Yavanas." But afterwards all these have been absorbed into the Hindu-fold. It seems that the kings of all these dynasties were conscious of the fact that they were held in low esteem by the high class Āryans, and in a crazy mood of aspiration to be included into the high class people, they named their daughters Gautamīs, Vāsishṭhīs, Balaśrīs, etc. It is an admitted fact that the Āndhras were Hindus and were of

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Mānavyasa gotra. They were not Buddhists. Inter-marriages in olden days were quite common among the ruling races and continued down to the 11th and 12th centuries. The latest instance of this system can be quoted from the Chālukyas, where the Emperor Vikramāditya married a Jain princess, Chandrikādevi, of the Silāhāra dynasty of Kolhāpūr. It is no wonder, therefore, if the Hindu Pulumāvi had married a Buddhist Kshatrapa princess.

The Āndhras were tolerant kings. For, they have made grants to Buddhist monks, and this fact is alluded to in their inscriptions of Nāsik, Kaṇheri, Nānāghāt, and Kārle caves. Why should we not suppose then that the kings of Kolhāpūr also, themselves being Hindus, were tolerant to Buddhists? The answer is not far to seek. The Āndhra kings, the contemporaries of these, have not totally accepted a Buddhistic symbol for their coins, while these kings have no other symbol but a chaitya on their coins. These kings of Kolhāpūr were, therefore, purely Buddhists.

Ptolemy was certainly contemporary with Pulumāvi, and the information which he gives concerning him is probably correct. He says, "Paiṭhaṇa was the capital of Pulumāvi, and he and Ṣashṭana the grand-father of Rudradāman were contemporaries." "There is more difficulty," says Prof. Rapson in his Catalogue of Coins, "in explaining a notice which occurs in the section of Ptolemy immediately following the one in which Pulumāvi seems to be mentioned —VII. I. 83, 'Hippokura the capital of Vilivāyakura'—the name or title which occurs in conjunction with the metronymics Vāsishṭhi-putra and Gotamī-putra on coins found at Kolhāpūr." This difficulty of Prof. Rapson can very easily be surmounted if Pulumāvi and Vilivāyakura are supposed to be two different persons. Otherwise, Ptolemy would not have mentioned the name of Vilivāyakura, when Pulumāvi was reigning at Paiṭhana. Again one and the same person cannot at one and the same time rule at two different places.

Weighing all these arguments well, one will arrive at the conclusion that the kings of Kolhāpur were not the Āndhra kings themselves.

7. "The peculiar titles Vilivāyakura and Sivalakura have been found nowhere else; and it is not unlikely that they were used by the Āndhra sovereigns only in that province of their empire in which Kolhāpūr was included. If this view be accepted, we must conclude that the Kolhāpūr coins furnish us with no proper names, but merely with the metronymics and the peculiar local titles of the Āndhra kings. Having available only the imperfect and unsatisfactory evidence, we must regard the following identifications as purely tentative.

No. 2. Māḍharī-putta Sivalakura may perhaps be the

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Mādharī-putta Swāmi Sakasena (Kaṇheri inscr.) and the Sakasena or Sakasada of the coins from Āndhra-desa.

No. 3. Gotamī-putta: Vilivāyakura may be the great Gotamī-putra of the Nāsik and Kārle inscr. who restruck with his own type the coins of Nahapāna in the Nāsik District.

The identification of No. 1, Vāsiṭhī-puta: Vilivāyakura, must remain doubtful. The evidence of the restruck coins shows that he can not possibly be identified with the best known Vāsishṭhī-putra, *viz.*, Pulumāvi, who was the son of Gotamī-putra; but this metronymic was common in the dynasty, and there is no difficulty in supposing that it was borne by the predecessor of Māḍharī-putra in the Kolhāpūr District." Prof. Rapson's Catalogue of Coins P. lxxxviii.

Such a suggestion was made by Pandit Bhagawānlāl Indraji in his article on the Kolhāpūr Coins, and it has been upheld by Prof. Rapson. This argument of Pandit Bhagawānlāl is based on similarity of the names, Gotamī-putra and Mādharī-putra. The argument of Prof. Rapson is contradicted by the following one of himself. "Like the coins of fabric B from Āndhra-deśa, they have a 'horse' for their type; but they are of rougher workmanship, and they have a different reverse type '1. chaitya; r. tree.' This reverse, it may be noticed, connects them with the class which is tentatively assigned in the Catalogue to "Feudatories of the Āndhra Dynasty. Indeed it is not improbable that they may belong to the same class." Prof. Rapson's Catalogue of Coins P. lxxxi. He tentatively admits here that such princes may have been feudatories. Vāsishṭhī-putra Vilivāyakura, Māḍharī-putra Sivalakura and Gotamī-putra Vilivāyakura have struck coins of the above type, *i.e.*, coins on the reverse of which is a chaitya on l. and tree on r. These princes may, therefore, have been tributaries of the Sātavāhana or Āndhra kings according to V. A. Smith and Dr. Bhāndārkar.

8. Vāshshṭhī putra Vilivāyakura, and Māḍharī-putra Sivalakura have struck coins bearing on the reverse a chaitya surmounted by a crescent instead of the usual svastika. This is evidently, it has been noticed, due to the influence of the Kshatrapa coins. Pulumāvi has the crescent in his coins. It seems then, it will not be far from the truth to suppose that Vāsishṭhī-putra Vilivāyakura and Māḍharī-putra Sivalakura were the contemporaries of Pulumāvi, and Gautami-putra of Pulumāvi and Siri Yaj̃ña Satakarṇi. The idea may be stretched a little further, and it may be said that after Māḍharī-putra, Gotamī-putra ascended the throne of Kolhāpūr in the troubled times of Pulumāvi, and fought with him for independence.

9. The following historical material can be gathered from these notes. These princes of Kolhāpūr were the Governors under the Āndhras, as V. A. Smith and Dr. Bhāndārkar opine.

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Their coins bear the tree on left and right of the chaitya on the reverse. According to Prof. Rapson's tentative theory based on the position of the tree on the reverse, these princes did not like the supremacy of the Āndhras, and were always waiting for an opportunity to gain their independence, which they got when Rudradāman invaded their country. Mādharī-putra's independence lasted long, to the end of his reign as Pulumāvi had no time to look to internal affairs when he was fighting with his father-in-law. The next prince coming to the throne of Kolhāpūr was Gotamī-putra Vilivāyakura, the early part of whose reign was spent in peace and independence. Soon after he had to fight with Pulumāvi, Vāsishṭhī-putra Siva sri Sata karni (his brother), and Gotamī-putra Siri Yajña Satakarni (probably his son), for his independence. By this time the Kshatrapa war was over, and the Sātavāhana kings were paying attention to the internal feuds and warfare. For this very purpose, it seems, Gotamī-putra Vilivāyakura had to strike and restrike his coins so many times. At last he died for his independence on the battle-field. His coins came into disuse, and those issued last in his reign were not, therefore, at all worn out and spoiled.

K. G. Kundangar.

286. A Silver Coin struck in Nepāl in the name of 'Alā-ud-din Muḥammad Shāh Khilji.

This coin weighs 151 grains or 84 Ratis and is 1.25″ in size, about 6 grains less than the weight of a well-preserved coin of silver (Ṭanka) in my cabinet.

On the Obverse within a triple circle of lines, and 48 beads, the Arabic legend in the margin reads "Sikandar-us-Ṣāni Nāṣiri Amīr-ul-Mumanin Yamīn-ul-Khīlāfat," and in the middle within a small Ashtakoṇ of Tantric form or double square, there is a small winged lion of the well-known Nepal type, and an elephant below it facing to right; also a trifoliate over the word "Khilāfat".

On the Reverse again within a triple circle of the same form with 52 beads, the Arabic legend reads "Al 'Aẓam As-Sulṭān Abul Muẓaffar Muḥammad Shāh, 'Alā-ud-duniā-wad-dīn," with a small conch (Shankū) in the margin.

In the middle within a small circle in Nāgari characters of the 13th century, the words Shri Shri —— with two crescents and stars above each and a floral design below, are inscribed.

The Arabic characters of the legend are rather crude and of a rounded form and it is apparent that though the die-cutter copied the legend from an original coin of the Sultan, he was not literate in Arabic, and has committed several mistakes in copying the letters.

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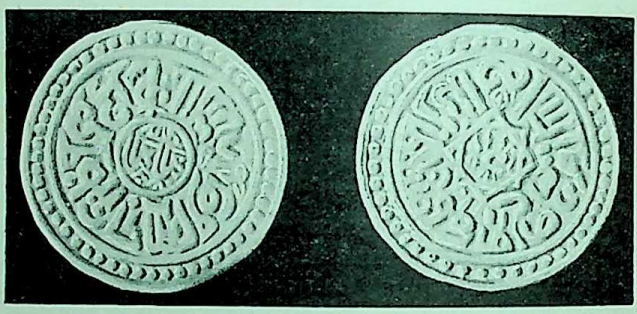
The words "AMĪR" and "YAMĪN" are broken up into two parts, and the title "YAMĪN-UL-KHILĀFAT" has been placed after "NĀṢIR I AMĪR-UL-MUMINĪN" contrary to the usual legend on the original coins of this king. On the Reverse again, he has put the word "AL 'AẒAM" of which the loop of the letter ظ (ZOE) is missing, before the word "SULṬĀN," and the position of the words "ABUL MUẒAFFAR MUḤAMMAD SHĀH" has been changed, and they have been put before "'ALĀ-UD-DUNIA WAD-DĪN," omitting the last word "SULṬĀN" of the legend, but he has copied the style of the word "SHĀH" exactly, making a floral design of it, just as on the ordinary coins. ﷺ. The title "ŚRI ŚRI," and the two crescents with small dots representing stars, the trifoliate, the SHANKU, (conch) and the circle of beads are exactly as in the later silver coins of PRITHVI NĀRĀYAN SĀH DEV, and ŚRI GURVĀN YUDHA VIKRAM

Obv. *Rev.*



SĀH DEV OF NEPĀL. The TANTRIC ASHTAKON and the winged lion with raised tail are peculiar to the NEPAL coinage, thus establishing the mintage of this coin in NEPAL or its territory.

It is possible, that according to the custom in NEPAL, the name of the ruling king "ŚRI ŚRI GAJ SINH" or "GAJENDRA NARSINH" of the period is depicted by the figures of an elephant and a lion.

Although there is no mention of 'ALĀUD-DIN's conquest of NEPAL or its territories in the histories, it is possible that the Sultan may have turned his eyes towards that country and compelled the then ruling Rājā to acknowledge his suzerainty and strike coins in his name in the NEPAL style.

I obtained the coin in Benares along with another copper coin of NEPAL of the SURYA VANŚI LICHHĀVI dynasty of the 1st century A.D. bearing an image of the sun, in the centre, and the legend "PASHUPATY" in Brahmi characters of the GUPTA style on the obverse, and the image of a bull on the reverse.

DURGĀ PRASĀD.

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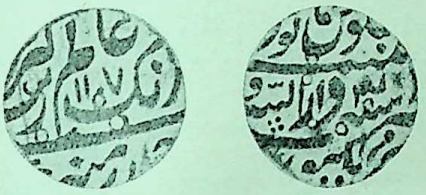
287. AURANGZEB'S RUPEE OF DĀRU-S-SURŪR-I-BURHĀNPŪR.

Obverse.	*Reverse.*
عالم گیر	جلوس مانوس
اورنگ زیب ۱۱۰۷	میمنت
شاہ	سنہ ۳۹ دار السرور
چو بدر منیر	ضرب
	برہانپور



Aurangzeb Rupee.
Mint Burhānpūr Dāru-s-surūr.
Hijri 1107.
Regnal year 39.
(The number 9 in the Regnal year is not clearly readable.)
Size ·95.
Weight 170.

In the Panjāb Museum Catalogue, a unique rupee of Aurangzeb of Burhānpūr mint is recorded with the honorific epithet بلدۂ فاخرہ, "the sumptuous town." See No. 1617. In all the other issues from this mint, the usual couplet type of Aurangzeb appears but the mint is not distinguished by any epithet. On the above coin, the mint-town is provided with the honorific prefix دار السرور 'abode of pleasure.' This epithet began to be first used on the issues of Shāh 'Ālam I, who in 1120 H, gave this epithet to the mint. There is nothing to show that on the coins of this mint issued by Aurangzeb, Burhānpūr was styled 'Dāru-s-Surūr.'. This is the only specimen in which the epithet دار السرور accompanies Burhānpūr during the reign of Aurangzeb.

VICĀJI D. B. TĀRĀPOREVĀLĀ.

Note.—But in the Historical literature, this epithet is associated with the name of Burhānpūr from the times of Shāh Jahān. See N.S. XXXV.—*Editor.*

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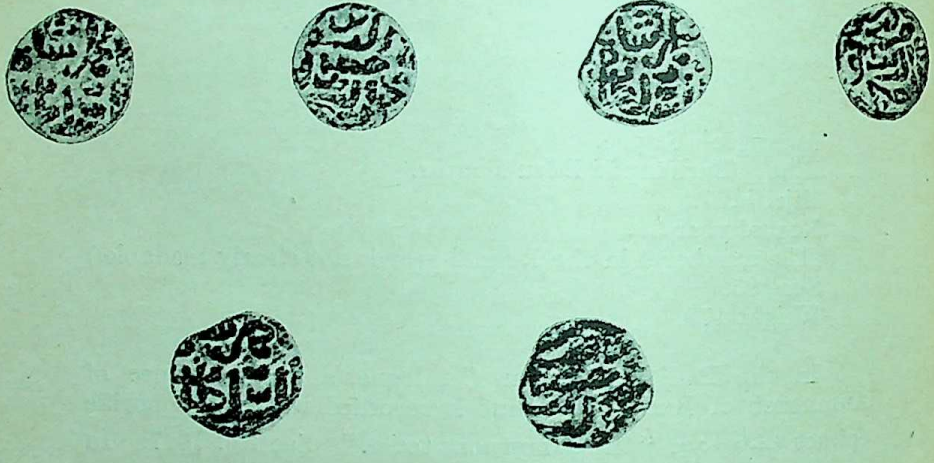
288. Coins of Nāṣīr Shāh of Gujarāt

While exhibiting coins of the Gujarāt Sultans in the Prince of Wales Museum of Western India, Bombay, I came across the following three copper coins. They belonged to the late Dr. G. P. Taylor's Collection, which was purchased by the Director General of Archæology and were offered for sale at the Indian Museum, Calcutta, in 1922. They formed one lot (No. 160–163 of the Sale-list of Indian Museum, Calcutta, dated 8th July 1921) and were bought by this museum at As. 2 per coin.

During the course of the exhibition, these coins, which had been assigned to Aḥmad I, seemed to me, on more careful examination, to be of a Nāṣīr Shāh. In order to be sure of my reading, I placed them before Mr. M. P. Khareghāt for his independent reading, and I was delighted to find that he also read



them in the same way. However, before writing anything on the subject, I invited the opinion of Professor S. H. Hodivālā, who informed me that no coins of a Gujarāt Sultan called Nāṣīr Shāh were known.

Now the question arises as to the identity of this Nāṣir Shāh. Up till now, we are not aware of any Sultan of Gujarāt of this name and much less of coins in his name. When we refer to history, we find that in 932 A.H.=1525 A.D., 'Imādu-l-mulk, having accomplished the murder of Sikandar, seated his younger brother Nāsīr Khān on the throne under the title of Maḥmūd II. This Sultan ruled for a short while, when Bahādur Shāh poisoned him and sat on the throne himself. Possibly these coins belong to this Sultan of Gujarāt.

The coins are round in shape and weigh (1) 140 grains and (2) 134 grains. The inscription on the obverse is 'Nāṣīr Shāh

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al-Sulṭān' and on the reverse 'Nāṣir-al-dunyā-wa-uldīn Abul-fatḥ.' Unfortunately there is no date on the coins.

The legend reads as under :—

Obverse	*Reverse*
ناصر شاه	ناصر الدنيا و
السلطان	الدين ابو
	الفتح

C. R. Singhal.

289. The Unassigned Coins of Jalāl Shāh Sultāni.

The Indian Museum contains two coins which Mr. Nelson Wright was obliged to place in the 'Unidentified' class. Each of them weighs 70 grains and shows on the obverse the name فتح الدنيا و الدين and on the reverse جلال شاه سلطاني. The date is 841 H. (I.M.C. II. p. 262). Now we know that Ibrāhīm Lody had a brother named Jalāl Khān who assumed the title of Sultan Jalāl-ud-dīn, "set up a jewelled throne," went through the ceremony of a coronation, and even waged open war with his brother. But these events occurred in 923-4 A.H. not about 841. (Elliot and Dowson, V, 11—13.) The *Ṭābaqāt-i-Nāṣiri* mentions another Jalālu-d-dīn Mas'aūd Shāh who rebelled against his brother, the Sultan Nāṣiru-d-dīn Maḥmūd and made a bid for the throne, but he did so in the second quarter of the seventh century of the Hejira and not the ninth. (*Ibid.* II. 349, 353, 371. III. 37-8.) A Jalālu-d-dīn Muḥammad Shāh and another Jalāluddīn Maḥmūd Shāh (or Fatḥ Shāh) are also included among the Independent Sultans of Bengal, but the known dates of neither, 817—835 A.H. and 886—892 A.H. are in accord with the requirements of the problem before us (I.M.C. II. 131; Firishta, Tr. Briggs, IV, 337).

In a word it has not been hitherto possible to trace in the published histories of the Muḥammadan period any reference to a reigning Sultan, usurper or claimant who bore the name Jalāl Shāh and ruled or arrogated sovereign power in or about 841 A.H. It may be therefore permissible to submit for the consideration of the readers of this Journal, a clue to the solution of the puzzle for which I am indebted to the "Catalogue of Persian Manuscripts in the British Museum." In his notice of a General History called '*Tārīkhi-Muḥammadi*' compiled by a Bihāmad Khān in 842 A.H., Dr. Rieu writes :

"Naṣīru-d-dīn Maḥmūd Shāh B [in] Firūz Khān B [in] Tājud-dīn Turk. fol. 436 b. This chief, who held the fief of Kālpi, founded there, in A.H. 792, a Muḥammadan city, which he called Muḥammad-ābād, made himself independent after the

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death of Ghiyāṣu-d-dīn Maḥmūd, and enlarged his dominions by successful wars with his Hindu neighbours. He died in 813 A.H. His son Ikhtiyāru-d-dīn Abul Mujāhid Qādīr Shāh fol. 446 b. At his death, A.H. 835, his three sons fought for the succession, their powerful neighbours, Ibrāhīm Shāh of Jaunpūr and Hūshang of Mālwah, joining in the struggle; the second Jalāl Khān, was eventually placed on the throne by Hūshang." (*Op. cit.* I. 86.)

As regards the author, who calls himself, Muḥammad Bihāmad Khāni, we are told that he was the son of Maliku-s-Sharq Malik Bihāmad, "who was brought up in the house of Firūz Khān B [in] Malik Tāj-ud-dīn Turk, who was appointed Vazīr by Ghīyāṣu-d-dīn Tughlaq Shāh on his accession, and was slain with that prince, A.H. 791. (See Briggs' Ferishtah, Vol. I, p. 466.) After that event, the Vazīr's son repaired to Kālpi (Muḥammad-ābād) where he made himself independent, assuming the name of Naṣīru-d-dīn Maḥmūd Shāh, and conferred the title of Vazīr on his brother, Junaid Khān. Bihāmad Khān who had passed into the latter's service distinguished himself in several military campaigns, and as a reward received in fief the town of Irich in Bundelcund. From this he was ejected, some years later, by the troops of Ibrāhīm Shāh of Jaunpūr, after a desperate struggle, in which the author's mother was slain, and the author himself, then a youth, was severely wounded, but he was subsequently reinstated in his possessions by Mubārak Khān, the son and successor of Junaid Khān. He was still alive in A.H. 842. The author relates various expeditions in which he was sent by his father in command of the troops. He became, however, a Murīd of Shaikh Yūsuf Budah, * * * and embraced a religious life. He then devoted his leisure to the composition of this work which * * * he completed in A.H. 842." (*Op. cit.* I. 84.)

A "Tārīkh-i-Muḥammadi" is quoted in his list of authorities by Niẓāmu-d-dīn Aḥmad (*Ṭabaqāt-i-Akbarī*, Lakhnau Lithograph, p. 3, l. 8 from foot) and a history bearing that name is also cited by 'Abdul Ḥaqq Dahlavi who speaks of it as "a work that somebody composed" (Elliot-Down VI. 484), but it does not appear to be known to other writers and the copy in the British Museum is probably the only one in existence.

But I will presently show that almost every one of the statements made by this unknown author in regard to the semi-independent rulers of Kālpī receives confirmation from the *Tārīkh-i-Mubārakshāhi* and other works. The only point in which they fail us—is the name of the successor of 'Abdul Qādir or Qādir Shāh. This link in the dynastic list has been hitherto missing and that loss was responsible for our inability to assign the coins. The *Tārīkh-i Muḥammadi* now enables us to complete the series and the problem is thus solved.

In the first place then, we read in the *Tārīkh-i-Mubārak-*

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shāhi that after the departure of Tīmūr, "the districts (*Shiqq*) in the Dūāb, and the fiefs in the neigbourhood of the capital came into the possession of Iqbāl Khān; but the territories in general remained in the power of the *Amirs* and *Maliks* who held them. Thus Gujarāt * * was held by Ṭatar Khān *; Multān * * by Khiẓr Khān, 'the *Shiqq* of Mahoba and Kālpi by Maḥmūd Khān, son of Malikzāda Fīrūz; the fiefs on the side of Hindūstān * * by Khwāja Jahān; * * Dhār by Dilāwar Khān, Sāmāna by Ghālib Khān; and * * Bayāna by Shams Khān—into so many portions were the territories of Dehli divided." (Elliot-Dowson IV. 37.) A very similar statement occurs in the *Ṭabaqāt-i-Akbari* of Niẓāmu-d-dīn, who adds that all these governors aspired to independence and not one of them was willing to obey another.

و هر کدام اینها دم اِستقلال میزدند و اطاعت یکدیگر نمي نمودند *

Op. Cit. Lakhnau Lith. 129 l. 10.

Firishta repeats the phrase about 'independence' and declares even more emphatically that "most of them, by the decree of the Most High, attained to power and Sovereign rule." بدولت و سلطنت رسیدند Lakhnau Lith. I. 159, l. 7; Briggs (I. 498) says all of them "styled themselves kings."

The above reference to Maḥmūd (or Muḥammad) Khān of Kālpi occurs in the chronicle of 802 A.H. The next entry is found in the annals of 816 A.H. and relates to his son Qādir Khān. "Intelligence was now brought," writes the author of the *Mubārakshāhi*, "that Sultan Ibrāhīm, was besieging Qādir Khān, Son of *Sultan* Maḥmūd Khān [in Kālpi], but Daulat Khān had not sufficient forces to attempt to relieve him." (E.D. IV. 44-5 : See also *Ṭabaqāt-i-Akbari*. 133, l. 7 : Firishta, I. 161, l. 11 from foot). Once more, we are informed that when Mubārak Shāh marched against Bayāna in 830 A.H., "a letter reached him from Qādir Khān, the Governor of Kālpi informing him that Sultan Ibrāhim Sharqi was coming up against Kālpi with a strong force. The Sultan therefore deferred his march to Bayāna, and turned to meet Sultan Sharqi." The battle which followed was indecisive and both the Sultans returned to their capitals. (E.D. IV. 63–4; *Ṭabaqāt-i-Akbari*. Text 140, l. 6.) Firishta's account is almost identical—and the only difference is that he speaks of the ruler of Kālpi as Qādir *Shāh*. (Text, I. 165, l. 7 from foot.)

The latest mention of Kālpi in Yaḥya bin Aḥmad's history relates to the events of 837 A.H. We read:

"Subsequently, he [Mubārak shāh] proceeded towards Hindūstān, for he had heard of war having broken out between Sultan Ibrāhīm and Alp Khān [*i e.* Sultan Hūshang of Mālwa] on account of Kālpi. He had previously contemplated leading his armies in that direction * * Orders were sent in every

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direction for the *Amirs* * * * to gather their forces * * and to join His Majesty." He was soon after assassinated. (*Tārikh-i Mubārakshāhi* in E D. IV. 79, *Ṭabaqāt-i-Akbari* Text, 145, l. 12; Firishta. Text I. 169, l. 6.) In his account of the Sultans of Jaunpūr, Firishta informs us that "in the year 839, [*recte* 837], Ibrāhim Shāh Sharqi proceeded to reduce Kālpi where he was opposed by Sultān Hūshang of Mālwa, but on receiving intimation that Sayyad Mubārak of Dehli was in full march to attack Jaunpūr, he countermarched without risking an engagement, and Kālpi fell into the hands of the King of Mālwa." (Briggs, Trans. IV. 366.) In the Mālwa Chapter, Firishta adds that "having ordered public prayers to be read in his name and having received homage from 'Abdul Qādir, Sultan Hūshang delivered over the charge of the government to him, as before, and returned to Mālwa." (*Ibid.* IV. 185.) In this translation, or rather loose paraphrase, Briggs speaks of the Kālpi ruler only as 'Abdul Qādir, but in the original, he is called

عبد القادر الموسوم بقادر شاه

i.e., "Abdul Qādir, having the name (or designation) of Qādir *Shāh*." (Text, Vol. II. 306, l. 13.) He is called Qādir *Shāh* by Niẓāmu-d-dīn Aḥmad also in his Section on the Sharqi Sultans. (Text, 531, l. 9 from foot and once more, by Firishta at Text, II, 307, l. 15.)

Qādir Khān or Qādir Shāh appears to have died, as the *Tārikh-i-Muḥammadi* informs us, in or about 835 A.H., and the intervention of Ibrāhīm and Hūshang was really provoked by fratricidal strife among his sons. It resulted in the installation by the Mālwa Sultan of Jalāl Khān, whose name is not mentioned in any of the published chronicles, but is clearly given by Bihāmad Khān, and he was alive in the year 842 A.H. in which this unique chronicle was completed. We do not know when the reign of Jalāl Khān (or Jalāl *Shāh*) came to an end, but it is certain that his brother Naṣīr Khān was ruling in Kālpi five years later, for we read :

"In the year 847, he [Sultan Maḥmūd Shāh Sharqi] sent an envoy to the court of Mālwa to inform Sultan Maḥmūd Khalji that Naṣīr Khān, the son of Qādir Khān of Kālpi, had within the last two or three years, disgraced the Muḥammadan name by encouraging the Hindu faith, and had carried his views of toleration so far as to permit Muḥammadan females to dwell with infidels. * * In conclusion, he observed that if the King of Mālwa did not * * send troops to restore the religious observances of the faithful at Kālpi, he himself would march to effect that object. Sultan Maḥmūd [Khalji] * * sanctioned the advance of Maḥmūd Shāh Sharqi to bring Naṣīr Khān to a due sense of his obligations as a true believer" (Briggs, Trans. IV. 367-8; Firishta, Text, II, 307, l. 2; *Ṭabaqāt-i-Akbari*, 529-530).

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It is scarcely necessary to pursue the story. It will suffice to say that after some fighting, Naṣīr Khān was temporarily deprived of Kālpi, and obliged to retreat to Irich, but Kālpi and its dependencies were after some time restored to him.

The point for us to note here is that in the *narrative of the same events* in the Section devoted to the Sultans of Mālwa, Naṣīr Khān is spoken of by Firishta as

نصیر ولد عبد القادر ضابطۂ کالپي که خود را نصیر شاه نامیده دم از استقلال میزد *

"Naṣīr, son of Abdul Qādir, Governor of Kālpi who having styled himself Naṣīr *Shāh* was pretending to independence." (Text, II. 247, l. 4), and these identical words occur in the Mālwa Chapter of the *Ṭabaqāt-i-Akbari* also. (Text, 550, l. 8 from foot). As a matter of fact, they appear to have formed part of the original letter addressed to the Jaunpūr Sultan by his brother of Mālwa and must have been borrowed by Niẓāmu-d-dīn and Firishta from the summary of that missive which they had found in the detailed histories of that province from which their own accounts were compiled. In a word, there can be little doubt that Naṣīr Khān had, like his father, assumed the title of *Shāh*.

The facts which emerge from this catena of extracts may be stated thus:

Naṣīr-d-dīn Maḥmūd Khān, the son of Malikzāda Firūz—the Vazīr of Ghīyāsud-dīn Maḥmūd Shāh Tughlaq made himself master of Kālpi during the period of anarchy which followed upon the invasion of Taimūr. He appears to have been practically independent and is called 'Sultan' by the writer of the *Tārīkh-i-Mubārakshāhī*. (*ante* p. 39) and 'Shāh' by the author of the *Tārīkh-i-Muḥammadi*. He was succeeded in 813 A.H. by his son 'Abdul Qādir or Qādir Khān—who is styled Qādir '*Shāh*' by Niẓāmu-d-dīn and Firishta as well as the author of the *Tārīkh-i-Muḥammadi*. 'Abdul Qādir was obliged, in 830 A.H. under the stress of an invasion of his territories by Sultan Hūshang Ghori, to acknowledge the latter as his suzerain. 'Abdul Qādir died in 835 A.H. and one of his sons, Jalāl Khān was installed in or about 837 A.H. as his successor. Jalāl Shāh died at some time after 842 A.H. and was followed by his brother Naṣīr Khān—of whom the Sultan Maḥmūd Sharqi complained that he was giving himself airs of independence, and that he had assumed the title of Naṣīr *Shāh* and even apostatised from Islam.

My submission is that the coins under discussion were struck by this Jalāl Khān, who had, like his father and grandfather before him, and his brother after him, given himself the title of 'Shāh.' He seems to have taken advantage of an apparently favourable moment to shake off the nominal yoke of the Mālwa Sultan and openly assert his pretensions to

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the *Khuṭba* and the *Sikka*. This opportunity he seems to have found in 841 A.H. Both the neighbouring kingdoms of Dehli and Mālwa which could claim him as a vassal were at the time reduced to a condition of impotence by domestic strife and internecine conflict. Sultan Mubārakshāh of Dehli had been assassinated in 837 A.H. by Sarwar-ul-mulk and the hands of his feeble son and successor were fully occupied with the extermination of his father's murderers and the suppression of disturbances created by Jasrath Khokhar in the Panjāb and the Langahs in Multān. In Mālwa, the death of Hūshang was followed by the accession of his incapable son, Muḥammad, who was poisoned after a short reign at the instigation of his minister Maḥmūd in 839 or 840 A.H. The change of dynasty and the usurpation of the throne by the Khaljis was not effected without civil war and the new Sultan was fully occupied during the two or three years after his accession in suppressing revolts, putting down pretenders and repelling an invasion from Gujarāt. (Briggs, IV, 189-205 ; *Ṭabaqāt-i-Akbari*. Text, 545-7.) Nor had Jalāl Shāh any thing to fear from the side of Jaunpūr. The long reign of Ibrāhīm Sharqi was now coming to a close and Niẓāmuddīn Aḥmad informs us that "in 840 A.H. a disease from which he had been suffering returned with such violence that no remedies produced any effect until he died in 844 A.H. (Text, 529, l. 7 from foot.)

It may be permissible to add a few words in regard to one of the 'by-products' of this inquiry. On Akbar's coins of 963 and 964 A.H., Kālpī is styled Muḥammad-ābād. (P.M.C. Introd. xciv.) It has not been hitherto possible to say when the old Hindu town acquired this Musalman alias, or to determine the name of the ruler who was responsible for bestowing it. The *Tārīkhi-Muḥammadi* now enables us to answer both these questions satisfactorily.

S. H. Hodivālā.

290. Shashkāni or Shashgāni ?

The monetary denominations یکانی , دوکانی , هشتکانی, and پنجاه کانی are inscribed on some of the mintages of Muḥammad Tughlaq. The دوگانی and the ششگانی (with the *gāf*) are specifically mentioned by the contemporary chronicler Barani in his account of the *Muhr-i-mis*, *i.e.*, the Forced currency introduced by that monarch (*Bibl. Ind.* Text, 476). The historian Shams-i-Sirāj also informs us that among the numerous varieties of coins issued by Firūz Tughlaq were the چهل و هشت گانی , هشت گانی , ده گانی , دوازده گانی , بیست و چهار گانی , بیست و پنج گانی and شش گانی یک جیتل (*Bibl. Ind.* Text, 344). Lastly, the Syrian traveller Shihābu-d-din Dimishqi has left us in one of the

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extant portions of the *Masāliku-b-Abṣār* an observant stranger's account of the currency system of Muḥammad Tughlaq and transcribed, as a person writing in Arabic might be expected to do, the names by which the graduated subdivisions of the Tanga, from the one sixty-fourth part to the one-fourth, from the يكاني to the شانزده كاني (with the *kāf*) were known among the common people.

The diversity which is observable in the orthography of these designations has naturally led to difference of opinion in regard not only to their true pronunciation, but also to their origin or derivation. Thus Prof. Dowson in his translations of the passages from Barani and Shams-i-Sirāj writes 'Shashgānī,' 'Dogāni,' 'Chihl-o-hashtgāni', etc. (Elliot and Dowson, III. 240, 357.) On the other hand, the distinguished author of the 'Chronicles of the Paṭhān Kings of Delhi' invariably speaks of them as the 'Eḳāni,' 'Doḳāni,' 'Shashḳāni' and so on. And Dowson himself employs the 'k' and not the 'g', in deference to his opinion, in the English version of the extracts from the *Masālik*. "I retain," he writes, "the original spelling, as Mr. Thomas contends that *kāni* and not *gāni* is the true reading." (*Ibid.* 582 and note.)

Mr. Thomas sought to justify his own mode of pronunciation on the ground that Muḥammad Tughlaq must have borrowed the nomenclature from the South-Indian dialects, in which *kāni* signifies" the $\frac{1}{64}$th part in the measurement of land and other linear calculations." (Chronicles, 218 note.) Here again, Dowson put in a weak note of dissent and said that *gāni* was most probably "connected with '*gān*,' an aggregate particle added to numerals, although Mr. Thomas had found quite a different origin for the term" (E.D. III. 357 note). Prof. Dowson knew little or nothing of coins, and would appear to have been mortally afraid of differing from the 'Prince of Indian Numismatologists' on such a question. His feeble protest has, naturally enough, passed unheeded, the *kāni* of Mr. Thomas has continued to hold the field, and our catalogues of the coins of the Dehli Sultans and other works bear witness to the passive acquiescence of many distinguished writers in his theory.

It is to be regretted that no one should have attempted to state the other side of this question with the fulness which it demands and deserves. I beg permission to set out what, appear to me to be good reasons for pronouncing 'Shashgāni and not 'Shashḳāni' and for rejecting the derivation of the suffix from Canarese or Telugu.

In the first place, then, these designations are found spelt with the 'gāf' in manuscript copies of the Histories of Barani and Shams-i-Sirāj and the *Bibliotheca Indica* Editions of these authors.

It is true that in the only known manuscript of the *Masā-*

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liku-l-Absār, the 'Kāf' only is used, but this is really immaterial, and does not affect the point at issue as there is no symbol to represent the hard sound of 'g' in the Arabic alphabet. The author of that work has tried to reproduce the sounds he had heard as faithfully as the limitations of the Semitic script would permit and no more. As a rule, the 'g' in words borrowed from Persian or other foreign languages is changed in Arabic into a 'j'. It is not difficult to understand why Dimishqi has not followed this course. He must have felt that *Ejāni* and *Dojāni* and *Shashjāni* would convey to his readers in Syria and Egypt an altogether erroneous notion of the sounds as they had fallen upon his own ears during his sojourn in Hindustān.

It is also true that on the coins of Muḥammad, the 'Kāf' has one stroke only, but this decides nothing, as the second stroke of the 'gāf' is almost invariably left out in coins as well as Inscriptions. (Wright, I.M.C. II, Pl. VIII, Nos. 615, 622; Pl. X, 697; Pl. XII, 780.) Regarding the etymology, my submission is that it is not at all necessary to go so far afield and laboriously explore Canarese or Telugu dictionaries, when a perfectly satisfactory explanation is to be found in contemporary usage, in the idiom of the Persian language itself, as it was spoken and written in those times. In modern Persian, 'gān' the sign of the plural ordinarily affixed to nouns ending in ه, is invariably left out after numerals, and we would say پنجاه جیتل, سه تنکه, ده من and so on, but it is clear from the pages of Minhāj, Barani, Shams-i-Sirāj and others that in their day, the particle 'gān' was more often than not, added to *all* numerals. The following examples will, I trust, suffice to make the point clear:—

برادران پنجگانه *Ṭabaqāt-i-Nāṣiri*, Bibl. Ind. Text. 50, l. 2.

سلطانان هفتگانه *Ib.* 69, l. 16.

ده گان پانزده گان اسیر *Ib.* 368, last line.

بیست یگان چوب Barani, *Tārikẖi Fīrūzshāhi*, Bibl Ind Text. 308.

بیست گان سي گان تنکه	,,	,,	63, l. 3	from foot.
بیست گان سي گان هزار تنگه	,,	,,	162, l. 11.	
سه کان چهار گان ماه	,,	,,	22, l. 3.	
شصت گان هفتاد گان هزار جیتل	,,	,,	30, l. 6.	
دوگان سه گان شب	,,	,,	210, l. 6.	
سیصد گان تنکهٔ نقد	,,	,,	244, l. 5	from foot.
ده گان و پنجگان هزار تنکه	,,	,,	209, l. 3	from foot

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Several other instances will be found in the same work at pp. 31, 86, 123, 239, 271, 289, 318, 333, 550, 560, and 567. Similarly Shams-i-Sirāj has

سه گان سیر غله *Tārikẖi Fīrūzshāhi*, Bibl. Ind. Text, 233, l. 8.

صد گان پنجاه گان بیست گان یازده گان *Ibid*, 268, l. 13.

ده گان معني *Ibid*, 310, l. 2.

دوگان و سه گان نفر بنده *Ibid*, 317, l. 9.

ده گان تنکهٔ پنجاه گاني *Ibid*, 348, l. 3

The idiom appears to have survived upto the last decade of the sixteenth century, as in the Persian translation of the *Bāburnāma*, made by the Khāni Khānān 'Abdur-Raḥīm about 1595 A.C. we find him speaking of چهار گان ماه and دوگان ماه. Bombay Lithograph of 1308 A.H. p. 203, l. 8.

I do not mean that Mr. Thomas was not aware of this fact and he may have noticed it in the course of his reading, but he had never meticulously studied the style of Barani, whom he held in scant esteem, and whom he speaks of as having at one time "denounced in no limited terms." (Chronicles, 133 and Note.) However that might be, what he appears to have been puzzled by was the strange denomination یکاني which he had found on the unique coin belonging to General Cunningham, which is figured in the 'Chronicles'. And it was probably this difficulty, the affixing of the plural sign to the unit—which first led him to seek and find a derivation from the Dravidian. But it is plain that یگان and even نیم گان was in conformity with idiomatic usage in the fourteenth century, as witness the following:—

یگان دوگان سال	Barani,	51, l. 10.
یگان سفینهٔ غزل	,,	68, l. 12.
یگان پاس	,,	104, l. 3.
یگان چیتل	,,	288, last line.

The particle گان is affixed even to the word for 'half' (نیم) at 309, l. 1 and 333, l. 5 from foot.

And there is no lack of parallels in his contemporary Shams-i-Sirāj, who writes:—

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یگان تنکهٔ نقد	*Tār. Fīr.*,	121, l. 7.
یگان نفر امرای کهار	,, ,,	196, l. 9.
یگان ملوک کبار	,, ,,	199, l. 1.
یگان دوگان روز	,, ,,	229, l. 11.
یگان چتر	,, ,,	256, l. 2.
یگان طناب ریسمان	,, ,,	310, l. 2.

Briefly, it can scarcely be doubted that this یکانی stands for یگگانی *i.e.* for what Barani speaks of above as یکان جیتل and this has been shortened into یگانی, the 'Kāf' having been elided as in یگان for the sake of euphony and the ی having been added as in بندگان چهل گانی, ترک چهل گانی, (Barani, 26. l. 11, 27 l. 9, 65 l. 6) and ترکانِ چهل گانی (*Ib.* 550, l. 14).

This is not all. There are some passages illustrating the idiom in a much earlier writer which seem to me to possess even greater significance and which I must now quote. They occur in the *Tārīkh-i-Nāṣiri* of Abul Faẓl Baihaqi—a History of the Ghaznivides which was written about 1063 A.C. (455 A.H.).

In giving an account of the appointment of Bū Sahl Zauzani as عارض or muster master of the army of Sultan Mas'aūd Ghaznavi, he writes :—

او را دو حاجب یکی سرای درونی و یکی بیرونی بجامه خانه بردند و خلعت سخت فاخر بپوشانیدند و کمر زر هفتصد گانی که در شب این همه راست کرده بودند *

Bibl. Ind. Text, 182, ll. 7-5 from foot.

This is thus translated in Elliot and Dowson—

"He was conducted to the wardrobe by two guards one of whom served outside and the other inside the palace. A rich Khil'at was bestowed on him and *a girdle with* [*recte*, worth ?] *seven hundred pieces of gold*, which had all been prepared over night." (History of India, II. 73.)

Elsewhere, speaking of a similar function on the appointment of Ahmad Niāltigīn as commander-in-chief of Hindustān, Baihaqi says :—

دویم شعبان این سال امیر فرمود تا احمد نیالتگین را بجامه خانه بردند و خلعت پوشانیدند خلعتی سخت فاخر و پیش امد کمر زر هزار گانی بسته و با کلاه دو شاخ و ساختش هم هزار گانی بود *

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Ibid. 326, l. 13.

This is thus rendered by Dowson, or rather by his Munshī. (See Vol. II Preface p. ix.)

"On Sunday, the second of Sha'abān of this year [424 A.H.] the Amīr [i.e. Sultan Mas'aūd] ordered Aḥmad Niāltigin to be taken to the wardrobe and he was invested with the Khil'at. It was very splendid; first came the golden girdle, which was of the value of *one thousand Kānis* and with it also was given a cap with two points, which was also prepared at the expense of the same sum." E.D. *Ibid.* II. 118. (The Italics are mine.)

Lastly, we are told in another passage which is not translated in Elliot and Dowson's work, that when Khiwāja Aḥmad bin 'Abdus-Ṣamad was appointed Prime Minister, he also was given a *Kamar-i-zar-i-hazārgāni.*

خلعتی سخت فاخر راست کردند و دو شنبه ششم جمادی الاولی خلعت پوشانیدند کمر زر هزار گانی بود در آن *

Text. 462, l. 2 from foot.

"They prepared an exceedingly rich Khil'at for him and he was invested with it on Monday, the 6th of Jumād I. [424 A.H.] and in it was included a *Hazārgāni waistbelt of gold.*"

Once more we are informed that when the office of *Dīwān-i-'Arẓ* was conferred upon Abul Fatḥ Rāzi in 423 A.H., a *Kamar-i Haft-Sad-gāni* (کمر هفت صدگانی) was included in the *Khil'at. Ibid.* Text, 417, l. 13.

But the same author describes the richer dress of honour which had been bestowed upon Khwāja Aḥmad Ḥasan Maimandi when he was appointed to the office of Prime Minister somewhat differently and in the following words :—

قبای سقلاطون بغدادی بود سپدی خورد نقش پیدا و عمامه قصب بزرگ و زنجیرهٔ بزرگ و کمری از هزار مثقال *

Text, *Ibid.* 177. l. 2.

And this is translated as follows:

"There was a garment of scarlet cloth of Baghdād, embroidered with small flowers; a long turban of the finest muslin, ... a large chain and a *girdle of one thousand misqāls.*" E.D. II. 69.

Elsewhere again, we are informed that when a Khil'at was bestowed upon the Amīr Sulaimān on his nomination as 'Shahna' (governor) of the Jabāl-i-Herāt, he received along with other things a کمر زر پانصد مثقال *i.e.*, a golden girdle of five hundred *Miṣqāls.* (Text, *Ibid.* 24, l. 3 from foot.)

It will be observed that the Munshi who drafted the English version of the three passages given in Elliot (see vol. II, Pre-

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face, p ix) has translated کمر زر هفتصد گانی correctly enough, as, "a golden girdle with [*Recte* worth ?] seven hundred *pieces of gold*", but he has rendered کمر زر هزار گانی "as a golden girdle which was of the value of *one* thousand *Kānīs*"!

'Kānīs' indeed! and in Nishāpūr? Are we to think that they were the *kānis*' of Mr. Thomas's Dravidian dictionaries, —and that the golden girdle 'studded with turquoises which was presented to the Grand Vazir was worth one thousand *kānis* or Jitals, that is, $\frac{1000}{64}$ or a little more than fifteen Tankas!

Surely not. But if that is not the meaning, what does *Hazārgāni* really signify? Well, there can be little doubt that the other version given by the Munshi himself is fairly near the mark—a thousand "pieces of gold."

It is of course possible that the meaning may be a thousand, [or seven hundred pieces] of *silver*. However that may be, it is fairly clear from the surrounding context that هفتصد گانی and هزار گانی signify here 'seven hundred' and 'one thousand' current coins of some sort which were in general use at the time as measures of value and media of exchange. Elsewhere, the girdles are spoken of as کمر زر هزار مثقال and کمر زر پانصد مثقال and an envoy from the Khalīf of Baghdād also is said to have received along with a robe of honour and other things ساخت زر پانصد مثقال (Text, 363, l. 2). In these cases, the meaning may be "girdles *weighing* 'one thousand' or 'five hundred' miṣqāls" or girdles *worth*, that is, *of the value of* 'one thousand' or 'five hundred' miṣqāls of gold (or of silver). Now we know that the miṣqāl weighed about 72 grains. (Historical Studies in Mughal Numismatics, pp. 9-10) and we also know that many of the *Dirhams* and the *Dīnārs* of the Ghaznivides turn the scale at some such weight.

I am therefore quite prepared to admit that the phrases 'five hundred miṣqāls' and 'one thousand miṣqāls' are equivalent to 'five hundred dinārs' (gold coins) or five hundred *dirhams* (silver coins) and 'one thousand *dinārs*' and 'one thousand *dirhams*'. And if any one were to assert that *Hazārgāni* and *Haftṣadgāni*' should be understood as '*Hazār miṣqāl* and *Haftṣad*' miṣqāl' I should have no particular objection to that mode of interpretation, as for the purpose of my argument, it comes to the same thing.

For my point is that all such expressions are elliptical, abbreviated or familiar modes of speech in which a numeral is prefixed to a noun signifying a thing or object universally understood, *e.g.*, some unit for measuring weight, value or time which is suppressed or implied as being too well-known to require specific mention. Thus in the *Hazārgāni* and *Haftṣadgāni* of Baihaqi, the suppressed noun may be *Dīnār* or *dirham* or

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Miṣgāl. In the *Dogāni, Shashgāni*, etc., of the Tughlaqs the implied substantive is *jital*. In both cases, the final ی signifies 'holder' or 'container'.

All languages abound in such forms of speech and at least two other instances are to be found in Persian Dictionaries. Thus Steingass says that دهگانی 'Dihgāni' was the name of an ancient gold coin. Similarly بیستگانی 'Bīstgāni' occurs frequently in Baihaqi's *Tārīkh-i-Nāṣiri* (Text. 61, l. 9; 312, l. 5; 322, l. 2 from foot; 488, l. 16) as well as the *Siāsatnāma* of the Niẓāmul-mulk and is explained by the lexicographers as 'a monthly pension', which was so called because it used to be paid on the *twentieth* day. "Richardson's Persian English Dictionary; Steingass s.v.

In this connection, attention may be usefully invited to the recent discovery in the Kurram Valley of an anonymous copper coin exhibiting the legends 'Jital-i-yakāni (or Yagāni)' and 'Ẓarb i Akurmān' in characters of the early part of the Seventh Century of the Hejira. (Num. Supp. xxxviii, p. 33.)

It is impossible to suppose that the knowledge of the Dravidian 'Kāni' had penetrated to the Kurram Valley a hundred years before the accession of Muḥammad Tughlaq or that the ruler on the North-West Frontier who stamped this coin also had borrowed the designation from the languages of Southern India.

But it is scarcely necessary to pursue the matter further. It would appear that *Yagāni, Dogāni*, etc., are short forms bearing a close resemblance to the modern English 'fiver' and 'tenner' or the Latin 'Sestertium' which was worth $2\frac{1}{2}$ asses and which was so called from 'Semi, half' and 'tertium' third.

In a word, my submission is that Mr. Thomas was wrong in regard to this question. And here I may invite attention to the fact that under the influence of certain metrological preconceptions of his own, that eminent writer had repeatedly proclaimed his firm allegiance to the doctrine that the silver tanka of the 'Pathāns' was worth sixty-four jitals, although Firishta had explicitly asserted that it was valued at only fifty in the time of 'Alaūddīn. The chance discovery of the meaning borne by *Kāni* in Canarese and Telugu must have consequently appeared to him as something very different from a fortuitous coincidence and he must have seen in the one supposition an astonishing corroboration of the other. In the circumstances, the attempt to fortify his speculative metrology by the etymological conjecture, his problematical theory of the relation of the *Tanka* to the *Jital* by the hypothetical derivation of its fractional denominations from the Canarese was quite natural. But fuller knowledge has now shown that there is at

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least as much to be said for the 50-jital theory as for its rival. (Num. Supp. xxxviii. § 248), and it is obvious that if the metrology is shaken, the philology also is suspect. It may be permissible to trust that the foregoing discussion will help in shunting back the car of inquiry from the wrong line to the right.

S. H. Hodivālā.

291. Akbarpūr-Tānda and Akbarpūr.

Akbarpūr is such a common place-name in this country that it seems hopeless to locate that mint-town with any thing like certainty. But Akbarpūr-Tānda appears to stand on a different footing. It seems to have been described specifically in that way with the object of differentiating it from the other Akbarpūrs. There are good reasons for holding that it is the place of that name in Oudh, which is 35 miles South-east of Faiẓābād town. This Akbarpūr is now connected with Tānda by rail, and the distance between these two places is only eleven miles. But Mr. Nelson Wright says that he can "trace no notice of the Akbarpur in Oudh in the chronicles of the Akbari period, and that where Akbarpūr is mentioned, the reference is to the place on the Narbadā river south of Ujjain at the crossing of the great Dakhan road." (I.M.C. III, xxvii.) It is not unlikely that other cautious enquirers also may be pressed by the weight of this difficulty. If Akbarpūr in Oudh was a place of such insignificance as to be ignored altogether in the literature of the period, there would be a fair presumption against its having been a mint-town for several years. It may be therefore permissible to say that this objection can be met, that the town *is* mentioned in the *Akbarnāma* of Abul Faẓl and that there are several indications of its having been a place of some note during the reigns of Akbar and Jahāngīr.

"On the 13 Bahman," [XXV, R. 22nd January, 1581,] the historiographer writes, "when a watch of the day had passed, an engagement took place near Sultānpūr-Bilahri, 25 kos from Awadh", between Ma'aṣūm Khān Farankhūdi and the Imperial troops under Shāhbāz Khan. Shāhbāz himself was routed and "took the road of flight", but the left wing contrived somehow to defeat the foe. When they "heard of the rest of the troops having given way and encamped at *Akbarpūr, twelve kos from Awadh*, they sent "swift messengers to convey the news of victory to Shāhbāz Khān and the other leaders". Beveridge's Trans. III. 487, Bibl. Ind. Text, III. 4.

But the matter does not end here. According to the official Gazetteer of Faiẓābād District, Akbarpūr was "founded in the days of Akbar, by Muḥammad Muḥsin who was in charge of the old Pargana of Singhauli. He built a fort on the high bank of the Tons.....He also built a mosque and the bridge

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over the Tons. The former stands in the Fort, where the Tahsili buildings are now located. It bears a Persian inscription stating that this officer constructed it during the reign of Akbar, when Mun'im Khān Khān-i-Khānān was Governor of Oudh in the year 976 Hijri. The bridge is of great strength and solidity and was originally entirely of masonry. On the North face, there is a stone-slab containing an inscription in which the date of the building of the bridge is given as 976 H. and these buildings are said to have been erected under the direction of the Emperor himself when he passed through the place on his return from Jaunpūr to Āgra". United Provinces Gazetteer, Vol. XLIII, by H. R. Nevill, pp. 179–80. See also the Imperial Gazetteer, Vol. V, s.n.

Akbarbūr-Tānda is also mentioned by William Finch, the English East India Company's factor who was in this country from 1608–1611. A.C. "From Oude to Acabarpore", he writes "30 C[oss]; some 30 C[oss] from whence lyeth Banarce, the principal mart of Bengala goods. From Acabarpore to Jounpore 30 C[oss]." Early Travels in India, Ed. Sir William Foster, p. 176.

And there is a very similar statement in the *De Imperio Magni Mogolis*' of De Laet which was published in 1631.

"From Oudee to Achabarpore is 30 Cos; about 30 Cos from this place, but away from the route is Bonarce, a famous emporium for the products of Bengala. From Achabarpore to Jounpore 30 Cos" (*Op. cit.* Trans., J. S. Hoyland, p. 65).

It will be seen that so far as Akbarpūr-Tānda is concerned, we are on fairly firm ground and the place is easily identified. But the same statement cannot be made about the other Akbarpūr-as several places bearing that name can lay claim to antiquity and can be shown to have been in existence about the same time. Thus the Akbarpūr which is 12 miles N.W. of Mathūra or about 24 koss from Agra is mentioned more than once by the Emperor Jahāngīr (*Tūzuk*, Tr. Rogers and Beveridge, II. 112 and 193), by William Finch (Early Travels in India, Ed. Foster, 155), and by Sir Thomas Herbert (Travels, Ed. 1665, p. 76). The Emperor and Herbert merely name the place, but Finch describes it at some length and in the following words: "January the ninth, [1611], I departed from Agra for Lāhor . . The places I passed through were Rownocta [Rankata], twelve courses; Badeg Sarā, 10; Acabarpore 12c., formerly a great city, still famous for the antiquities of Indian gobins [gosāins?] or saints. A little short of the place, is a fair deury, [*deura*, temple] enclosed with a stone-wall, in which is a devoncan, and round about a little distance in vaults (or cloisters) are to be seen many pagods, which are stone images of monstrous men fearful to behold, but adored by the Indians with flowers and offerings."

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The Akbarpūr, five koss from Mandū is more summarily described by him as "a prettie town and faire castle" which had "a ferrie place" on the Narbada (*Op. cit.*, p. 140), and the place arrests attention in the Itineraries of John Jourdain (who was in India about 1611 A.C.) and Sir Thomas Roe also (Journal, Ed. Sir W. Foster, p. 147 and Embassy, Ed. *Ibid.* Hakluyt Society Publications, p. 101). There is, besides, a clear reference to it in the *Bādishāhnāma* of Abdul Ḥamīd (*Bibl. Ind.* Text, I. i. 336). The Akbarpūr near Kālpi which is said by the author of the *Khulāṣatu-t-tawārīkh*, to have been the birth place of Raja Bīrbal is noticed in the *Akbarnāma* and Abul Faẓl has recorded the visit paid by the Emperor to the house of his favourite on the 23rd of Ābān XXVIII, R —991 A.H. (Beveridge's Trans. III, 617 : Text, III, 415.). But Prof. Jadu Nāth Sarkār informs us that it is only a pretty village and must be distinguished from another Akbarpūr in the same part of the country which is 28 miles west of Cawnpore and the head-quarters of a taḥṣīl in that district, as the latter is not at the junction of the rivers Jamna and Chambal, but far away from both (India of Aurangzeb, p. 18 note).

There is still another Akbarpūr at the foot of Fort Rhotās in Bihār. Peter Mundy (1632 A.C.) and Jean Baptiste Tavernier (1665 A.C.) both speak of having passed through it on their journeys. (Journal, Ed. Sir R. C. Temple, II. 167; Travels, Ed. Ball, I. 121.)

But this does not exhaust the list. A *Mahāl* of that name in the Sarkār of Sārangpūr and a *pargana* with the identical designation in Sarkār Gāgron, (Ṣūba Mālwa) are included in Abul Faẓl's Rent-roll of Akbar's dominions. (*Āīn-i-Akbari.* Trans. Jarrett, II, 203 and 209.)

Lastly, a reference to Thornton's Gazetteer shows that there is an Akbarpūr, 42 miles south-east of Bareilly and another, 56 miles south of Dehli. (Ed. 1857, p. 18.)

Rhotās fort came into the possession of Akbar only in 982 A.H., and it would be possible to 'scratch' or disqualify some of the other competitors also, but even in the last analysis, at least two claimants would remain and we should have to decide between the crossing-place on the Narbadā near Mandū and the other Akbarpūr which is close to Mathura. Both of them are advantageously situated at the junction of the great high-roads,—the main arteries of commerce and communication in the land and I know of no decisive reasons for preferring one of them to the other.

S. H. Hodivālā.

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292. The Chronology of the Zodiacal Coins. A Postscript.

In the article on this subject which appeared in Num. Supp. XLI, I was able to discuss only those Zodiacal pieces which were known to me from the Catalogues generally available to students in this country. I beg permission to-day to say a few words about some other unique specimens in British and continental Museums, for the knowledge of which our grateful acknowledgments are due to Mr. Allan and Mr. Whitehead.

These unpublished coins are the following:—

(1) Ajmer, Gemini, 1033–XVIII, Guthrie collection, Berlin.
(2) Āgra, Aquarius, 1029-XV, Paris.
(3) Lāhor, Sagittarius, 1034–XX, Vienna.
(4) ,, Gemini, 1035-XX, Bodleian Library.
(5) ,, Sagittarius, 1036–XXI, Gotha.
(6) ,, Capricornus, 1036–XXI, Gotha.
(7) ,, Pisces, 1036–XXI, Vienna.
(8) ,, Pisces (Nūr Jahān), 1036–XXI, Royal Scottish Museum.

The first of these pieces satisfies the historical test but not the chronological, if the sign figured is Gemini. We know that Jahāngīr was in Ajmer in the XVIIIth *Julūs*. He arrived there on 9th Khurdād (*Tūzuk*. Text, 361, l. 12), and stayed there up to the 2nd of Ādar=1 Ṣafar 1033 A.H. (Text, 373, l. 6 from foot. Trans. II. 261 and 282.) But Gemini-Khurdād XVIII, R, corresponded to Rajab-Sha'abān 1032 A.H. not 1033. Here again the possibility of the Hijri date having been wrongly read must be borne in mind and a careful re-examination of the coin itself would appear to be advisable, as the symbols for ٢ and ٣ are very liable to be mistaken one for the other.

The Āgra Aquarius in Paris would seem to be false from both points of view, as Bahman XV, R. commenced on 25 Safar 1030 A.H., nearly eight weeks after the last hour of 1029 H. had struck. The Emperor himself was not in Āgra at all at the time. He had left the capital and arrived in Kashmīr on 11th Fravardīn of that year (*Tuzūk* Text, 297, l. 13; Trans. II. 139). He arrived in Lāhor from Srīnagar on 9 Ādar =5 Muḥarram 1030 A.H. (*Ibid.* Text, 318, l. 12; Trans. II. 183), and reached Agra only on 14th Isfandārmuz XV. (*Ibid* Text, 325, l. 27; Trans. II. 197.)

The Lāhor Sagittarius of 1034—XX cannot be impeached on the historical ground, but is open to suspicion on the chronological. The Emperor was in residence in Lāhor in Ādar XX, R. We know that he left Srīnagar in Mihr XX on 19-I-1035 H. (Hādi continuation of *Tūzuk*, 398.) As the exact date of his arrival at Lāhor is also recorded.

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as 3 Ādar XX R (*Iqbālnāma*, 247), and he must have been holding his Court in Ādar (Sagittarius) at Lāhor, where he stayed up to the 25th of Isfandārmuz XX R (Jumād II. 1035 A.H.). But Sagittarius-Ādar XIX R corresponded to Ṣafar-Rabī I. 1034 H. and Sagittarius-Ādar XX to Ṣafar-Rabī I. 1035 H. (*Vide* Table, Num. Suppl., XLI, p. 16.) In other words, if the Hijri year is correct, the Regnal date is an error, and if the *Julūs* reckoning is right, the Hijri correspondence is wrong. And the question is decisively settled adversely to this coin by the fact that the Cabinet des Medailles in Paris possesses a Lāhor Sagittarius which exhibits the correct date-expression, 1035—XX.

No. 4 is a piece struck at Lāhor in 1035—XX and bears on the reverse the figure of a woman holding some object under each arm which has been taken to be an infant. The figure has been consequently supposed to stand for Gemini. Now Gemini-Khurdād XX corresponded to Sha'abān-Ramaẓān 1034 A.H.—not 1035. (*Vide* Table in Num. Supp. XLI.) Moreover, Jahāngīr spent the summer of that year in Kashmīr and was not in Lāhor at the time. We know that he left Lāhor in the middle of Isfandārmuz XIX (*Iqbālnāma*, 240, Hādi, 394 l.) reached Srīnagar on Tuesday, 18th Ardibehesht XX, R (*Ibid.*, p. 243; 396 l.) stayed there up to 19th Mnḥarram 1035 H. and arrived in Lāhor on 30 Ṣafar 1035 A.H. (Ādar XX R) *Ibid.* 247; 399, l. 6). See also Elliot and Dowson, VI. 418. In other words, the coin is suspect from both points of view, if the figure is supposed to represent Gemini. But it is quite possible that this supposition is an error, and that the object in the arms is not an infant but a *hāndi* or water-jar. Mr. Gibbs thought that B.M.C. 340 was not a Virgo, but an Aquarius—a woman carrying two hāndis on the head. It is not unlikely that a careful scrutiny of the coin under discussion may prove that the figure is meant for a female Aquarius, carrying or pouring out two vessels of water.

Nos. 5, 6, 7, and 8 are all absolutely correct. It will be noticed that they were all struck at Lāhor and that they are of the three signs—Sagittarius, Capricornus, and Pisces—of one and the same year—the XXIst. This is explained by the fact that during the last years of his life, the state of the Emperor's health made it necessary for him to spend the summer in Kashmīr and the winter in Lāhor. The Dutch factor Pelsaert who was in India from 1620 to 1627, explicitly says so: "The reason of this King's special preference for this country [*scil.* Kashmīr] is that, when the heat in India increases, his body burns like a furnace, owing to his consumption of excessively strong drink and opium, excesses which were still greater in his youth. He usually leaves Lāhor in March or April and reaches Kashmīr in May." (Remonstrantie. Tr. Moreland and Geyl, p. 35.) But if Lāhor was too hot for him in the summer,

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Kashmīr was too cold and moist for him in winter. He used therefore to return to Lāhor about December (Ādar) and leave it again about Isfandārmuz. We know as a matter of fact that in the XXIst year, he left Kābul on 1st Shahrīvar XXI. *Iqbālnāma* 273; Hādi 410), entered Lāhor on 7 Ābān (*Ibid.* 278; 412) and left for Kashmīr on 21 Isfandārmuz—(*Ibid.* 290; 419). That is to say, he was in Lāhor while the sun was in the signs Scorpio, Sagittarius, Capricornus, Aquarius, and Pisces. A glance at the Table will show that the Hijri months corresponding to this period were Ṣafar—Jumād II. 1036. The date-expressions also are therefore perfectly in order.

S. H. Hodivālā.

293. The Coins bearing the name of Nūr Jahān.

The coins of the Empress Nūr Jahān are among the most remarkable curiosities of the Mughal series and have always possessed a considerable attraction for historians and numismatists. For this interest, they are indebted not only to the fact of their providing the only known examples of the appearance of the name of a Queen-consort on the currency of the Musalman rulers of this country, but to the halo of romance which surrounds the legend of her birth in circumstances of abject poverty, the rapid rise of her father to greatness, Prince Salīm's infatuation with her young beauty, the tragical fate of her first husband and the web of enchantment and intrigue which she succeeded in weaving round the head and heart of her second. But in the eyes of the mere coin-hunter, they are precious perhaps, for a very different reason, *videlicet*, the all-sufficient and all-atoning virtue of rarity. The persistent search of scores of enthusiastic collectors has resulted in the discovery of about two hundred specimens of these issues in the course of a century. Fourteen only are registered in the British Museum Catalogue; the Indian Museum can show but 13; the Lucknow Museum possesses 27, but the great collection in the capital of the Punjab has not more than 7. There were five only in the magnificent cabinet of Dr. White King and Lord Grantley's could boast of even less (3).

The incorporation of the 'style and titles' of a female in the poetical legend inscribed on the 'coins of the realm' seems to have aroused the wonder and astonishment of contemporaries and the fact is recorded not only by the Muḥammadan chronicler, Mu'atamad Khān (*Iqbālnāma*, Bibl. Ind. Text, 56; Elliot-Dowson, VI, 405; Historical Studies in Mughal Numismatics, p. 318), but by several European travellers of the period. The earliest reference in a foreign author is found in the 'Remonstrantie' of the Dutch factor, Pelsaert, who was in India from 1620 to 1627. Speaking of the Muhrs of his day, he writes:

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"There are gold coins but only of one series, named *mohur*. The double coin weighs a *tolā* or 12 *māshas* and is equivalent to 14 Rupees, the half coin in proportion. The inscriptions are similar to those of the rupees, except those which have been coined by the Queen; her coins, both rupees and mohurs, bear the twelve signs of the Zodiac, one sign on each coin." (Jahāngīr's India, Tr. Moreland and Geyl, p. 29.)

Peter Mundy, the English East India Company's factor (1628–1634) in speaking of 'Nour Mahalls' marriage says:

"Rather hee [*scil.* Jahāngīr] became her prisoner by marryeing her, for in his tyme shee in a manner ruled all in ruleing him, Coyninge money of her owne, buildinge and disposeinge as shee listed, putting out of the Kinges favour and receivinge whom shee pleased." (Journal. Ed. Sir Richard Temple, II. 206.)

Tavernier (1641–1667) in his usually credulous way repeats the curious legend that Nūr Jahān danced one day before Jahāngīr when he had 'drank briskly,' and obtained from him the boon of 'reigning as sovereign for a day' and ordered at once 'the coinage of two millions of Roupies of Gold and Silver bearing her own name' and the 'figures of the Twelve signs,' in the 'space of twenty-four hours.' (Travels, Trans. J.P. 1678, Part II, pp 10–11.)

Lastly, Manucci (1656–1712) relates how "they struck coin in her name, which had for symbol the twelve signs of the Zodiac and in her time they were current money" (Storia do Mogor, Trans. Irvine, I. 162).

It will be seen that all these writers confuse the Zodiacal issues with the coins of the ordinary type and none of them would appear to have possessed any real knowledge of their history or morphology. The coins of the Zodiacal type are really the rarest of Nūr Jahān's mintages and are so exceptional that only four or five specimens altogether are known.

I have said that the total number of coins bearing the Empress's name does not exceed two hundred, but when they are compared together and the duplicates are eliminated, they are found to have been struck in only eight places and to cover a period of not more than four years.

The following list comprises all the examples that are known to me.

AR Agra	1035–20.	I.M.C. 811.
,, ,,	1037–22.	B.M.C. 523–4.
AV Aḥmadābād	1035–21.	B.M.C. [L.M.C. II. 27].
,, ,,	1037–2[+].	P.M.C. 919.
AR ,,	1033–XIX to 1037–XXII.	
,, Akbarnagar	1037–22.	L.M.C. 1739.
, Ilhābād	1037–22.	(Cabinets of Mr. Whitehead and Mr. Brown). [L.M.C. II. 27].

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AV Kashmīr	1034–20.	Zodiacal (Cancer). Dacunha; Gibbs.
,, Lāhor	1035–20.	Zodiacal (Sagittarius). Paris.
,, ,,	1036–21.	Zodiacal (Pisces). Royal Scottish Museum.
,, ,,	1034–19.	P.M.C. 1.82.
,, ,,	1034–20.	B.M.C. 516–7.
,, ,,	1035–20.	P.M.C. 1183
,, ,,	1036–21.	Zodiacal (Capriconus). Mr. Brown's Cabinet. L.M.C. II. 27.
AR Patna	1037–22.	B.M.C. 525–6.
AV Sūrat	1036 [+].	B.M.C. 513, Mr. Wright's Cabinet.
AR ,,	1033–19.	B.M.C. 514.
,, ,,	1034–19.	L M C. 1749–50.
,, ,,	1034–20.	L.M.C. 1752.
,, ,,	1035–20.	I.M.C. 1180.
,, ,,	1035–21.	L.M.C. 1754.
,, ,,	1036–[+].	B.M.C. 521.
,, ,,	1036–21.	P.M.C. 1181.
,, ,,	1037–22.	I.M.C. 823.

The issues of Sūrat are comparatively the commonest. Those of Aḥmadābād, Lāhor, Āgra and Patna rank next in order of rarity, while the mintages of Akbarnagar, Ilhābād and Kashmīr are each represented by not more than three or four specimens.

We know that Gold coins were struck in Jahāngīr's name in about twelve towns and Silver coins in as many as twenty-five. But the Muhrs of Nūr Jahān were put forth by only four cities in numbers so limited as to be counted on one's fingers and the total number of mints which stamped her name on Rupees is but seven. In the circumstances, the question which naturally occurs to us is 'Why were the Imperial orders in this behalf obeyed in only eight towns and that also in such a casual and perfunctory manner that the issues of each of four mints are confined to a solitary year and are in number so few as to be all but unique?' The science of Numismatics has been justly compared to a handmaid carrying the lamp of Truth for her mistress, History, in such a way as to shed its light on the path of both, and it is obvious that the answer to this question must be sought in the Chronicles which record the political events of the reign.

Mihru-n-nisā was married to Jahāngīr in the 6th year after his accession (*Iqbalnāma*, Text, 54; Elliot and Dowson VI. 403–4), but her name is first mentioned in the *Tūzuk* only in the Diary of the 9th (Beveridge's Tr. I. 266). In the annals of the 10th, Jahāngīr records the bestowal upon her of the title by which she is now universally known. (*Tūzuk*. Aligarh Text,

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p. 156, l. 21; Rogers and Beveridge's Trans. I. 319.) The Emperor himself was passionately fond of 'Shikār,' and his love and admiration for the 'Light of the Harem' must have been undoubtedly enhanced when she killed four tigers with only six shots and on the same day in the 12th (*Tūzuk*, Text, 186, l. 5; Trans. I. 375). But she had at least one powerful rival in his affections in Ṣāliḥa Bānū who had the style of 'Pādishāh Maḥal' and 'Pādishāh Bānū Begam', and it was only after her death in the 15th (*Tūzuk*, Tr. II. 86 n and 159) that she became the chief wife. In the 16th year, the Emperor had a violent attack of asthma, and the physicians after doing all they knew, despaired of his recovery and even declined to undertake further treatment. But "Nūr Jahān Begam, whose skill and experience are greater than those of the physicians, especially as they are brought to bear through affection and sympathy, endeavoured to diminish the number of my cups and to carry out the remedies that appeared appropriate to the time, and soothing to the condition * * * and the signs of health became apparent". (*Ibid.* II. 213–214.) About the same time, her daughter by her first husband was married to the Emperor's youngest son Shahrīār (*Ibid.* II. 187–8), and her son-in-law was soon afterwards promoted to a Manṣab of 8000 and 4000 horse (*Ibid.* II. 199). This alliance entirely transformed her political outlook. Hitherto she had thrown the weight of her influence into the scale on the side of Prince Khurram against Khusrū. But her one object in life hereafter was to retain her own ascendancy by securing the succession for the ne'er-do-well who had married her daughter and all her talents and energies were now directed to the consummation of that end. We now notice her interfering openly in political affairs and writing a letter in her own name to the mother of Imām Quli Khān, the ruler of Tūrān. (*Ibid.* II 205.) When her father died in Bahman XVI R., Jahāngīr says he gave "the establishment and everything belonging to the government and Amirship of 'Itīmādu-d-daula, to Nūr Jahān Begam and ordered that her drums and orchestra should be sounded after those of the King." (*Ibid.* II. 222.) This practically meant that she became the first subject and second person, in the Empire and that she took precedence even of the Princes of the blood royal. So long as her father was alive, she had been restrained by his prudent and moderate counsels, but after his demise, her brother Āṣaf Khan, was not strong enough to keep her under control and her dominion over the Emperor become absolute. The rebellion of Shāh Jahān which soon followed was undoubtedly due to and fomented by her intrigues and it is significant that the opening act of the Prince's offensive was the sequestration of her personal Jāgīrs. (*Ibid.* II. 235.) The defeat of his forces at Balūchpūr, the rout of his adherents in Gujarāt and the final reverse on the banks of the Tons, naturally raised her

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influence to its height and we find that towards the end of the XVIIIth year, her patronage and protection was sufficient to secure pardon and immunity for the truculent traitor Jagat Singh, the son of Rāja Basū. (*Ibid.* II. 289.) Jahāngir's constitution also was breaking down under the strain of nearly forty years' addiction to spirits and opium. He tells us himself that he had to give up writing "the notes of events and occurrences with his own hand, as heart and brain did not accord." (*Ibid.* II. 246.) His bodily and mental powers were beginning to fail, and it was at this time probably that he made the famous declaration about "bestowing the sovereignty on Nūr Jahān Begam and requiring for himself nothing beyond a Ser of wine and half a Ser of meat" (*Iqbālnāma* Text, 57, Elliot and Dowson VI. 405). This same author tells us that she used to sit in the balcony of the palace, that the nobles had to present themselves and listen to her dictates, and that in all Farmāns, receiving the Imperial Signature, the name of Nūr Jahān the Queen-Begam was jointly attached." (*Ibid.*). And the shrewd and observant Pelsaert who was in charge of the Dutch factory at Āgra, writing in 1626 A.C. describes the situation at Court in the following words. "The king does not trouble himself with public affairs, but behaves as if they were no concern of his. If any one with a request to make at Court obtains an audience or is allowed to speak, the king hears him indeed, but will give no definite answer of Yes or No, referring him promptly to Āṣaf Khān, who in the same way will dispose of no important matter, without communicating with his sister, the Queen, and who regulates his attitude in such a way, that the authority of none of them may be diminished. Any one then who obtains a favour must thank them for it and not the king." (*Op. cit.* 50–51.)

The earliest Coins bearing her name are dated 1033-XIX, and may be justly said to mark her arrival at the zenith of her power. By that time, the unhappy Khusrū had been done to death by Shāh Jahān, Shāh Jahān himself had been hounded out of the Empire, while Parvīz was driven from Court and sent in fruitless pursuit of his insurgent brother from one end of the kingdom to the other. The Emperor's entourage consisted mainly of her relatives and adherents and her game was to set the political chess board in such a way that at the critical moment, she could effectually checkmate her opponents. These coins are peculiarly interesting as they tell us in a way how slowly and gradually she was able to work out her plans and indicate also how partial and incomplete was her success.

The Metropolitan Province of Āgra was obviously of capital importance for her purpose and we find that Qāsim Khān Juvaini was named Ṣūbadar of Āgra in succession to Muqarrab Khān in the XIXth year of the *Julūs* (*Iqbālnāma*. Text, 240; Muḥammad Hādi, *Takmīla* or Continuation of the

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Tūzuk-i-Jahāngīrī. Aligarh Text, 394, l. 12). The exact date of his appointment is not stated, but as the departure of the Emperor for Kashmīr in the middle of Isfandārmuz XIX (Jumād I 1034 A.H.) is recorded a few lines lower down, it must have been about the end of that regnal year. This position he appears to have retained upto the end of the reign, for he is expressly said to have been the Ṣūbadār of Āgra at the coronation of Shāh Jahān in Jumād II, 1037 A.H. and to have been then transferred to Bengal (*Bādishāhnāma*, Bibl. Ind. Text, I. 1. 125 last line).

This Qāsim Khān was married to Nūr Jahān's sister, Manīja Begum and the author of the *Maāṣiru-l-Umarā* informs us that the wits of the day used to speak of him as قاسم خان منیجه—'Manīja's Qāsim Khān' and thus playfully allude to the wife having been the foundation of the husband's fortunes (Text. III. 79). There is a reference to 'Maunissa Begum', in De Laet also, who tells a story of Qāsim Khān having been superseded by Muẓaffar Khān and to have been restored almost immediately in consequence of the secret intrigues and dominating influence of his wife. (*De Imperio*, Tr. pp. 223, 228.) Now the earliest Coin of the Agra Mint is of 1034—XX, and the latest of 1037–XXII, which is in perfect accord with these facts, and there can be little doubt that they were struck by the Dārogha of the Āgra mint because the Queen's brother-in-law was the Governor of the Province.

The rich Ṣūba of Guǰarāt had been assigned to the Prince Khurram in the XIIth year of the reign, (Beveridge, *Tūzuk* Trans. I. 424), and his adherents and nominees held authority in the province. But when he rebelled, Dāwar Bakhsh was appointed Governor with his grandfather A'aẓam Khān as guardian or Atālīq (*Ibid.* II. 260). When A'aẓam died in or about Shahrīvar XIX R, Dāwar Bakhsh was recalled, and Ṣafī Khān (or Saifkhān), was appointed to officiate, pending the arrival of the new Ṣūba, Khān Jahān Lody (Hādi, 394.) But the services of the latter were required elsewhere and he was soon afterwards transferred and made Atālīq of Prince Parvīz (E.D. VI. 418–9; Hādi 399). Saif Khān or Ṣafī Khān then became Governor of the province and continued to occupy that position until the end of the reign. One of the earliest orders issued by Shāh Jahān after his accession was for dismissing and throwing him into prison. (*Bādishāhnāma* I. 1, 76–77; *Maāṣiru-l-Umarā*, II, 419.) Ṣafī Khān belonged to a family which had been related to that of Nūr Jahān from old times, and he was married to Malika Bānū, the eldest daughter of Nūr Jahān's brother, Āṣaf Khān. He had been appointed Diwān of Guǰarāt in the 12th year of the reign (*Mirāt-i-Aḥmadi*, Bombay Text, Pt. I. 201) and acquired great influence there in consequence of having held that office for many years. He

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was Shāh Jahān's brother-in-law and the Prince had naturally expected that "on account of this connection, Ṣafi Khān would be on his side. But an eternal decree had gone forth", Jahāngīr himself tells us, "for Ṣafī Khān's loyalty and prosperity", (*Tūzuk*, Trans. II. 262) and he had taken the lead in putting down the revolt and driving the Prince's adherents from the Province. (*Ibid.* II 261–267). In a word, he was the chief executive officer in Gujarāt and protagonist on the Imperial side during the last four years of Jahāngīr's reign. The Nūr Jahān Coins of Aḥmadābād start in 1033–XIX and run on without interruption to the end which is just what we might expect from Ṣafī Khān's zeal and devotion as her relative and partisan.

The Ṣūba of Bengal had been assigned to the Prince Parvīz and he had given it in Jāgīr to Mahābat Khān (XIX R) whose son was in actual charge, as his father's *Nāib* or deputy. (Muḥammad Hādi, 393, l. 2 from foot and 394, l. 6.) When Mahābat rebelled, Mukarram Khān was named Governor by the Emperor, but he was accidentally drowned on the very day on which he was to be installed. The province was then assigned to Fidāi Khān. That this was done on the recommendation of Nūr Jahān is obvious from the fact that the new governor undertook to remit ten laks of rupees every year to the Imperial Treasury, of which five were to be accounted as the *Peshkash* of the Emperor and the other five as *Nazar* for the Begam. (*Iqbālnāma*, Text, 291; Muḥammad Hādi, 419, l. 3 from foot.)

Fidāi Khān's original name was Hidāyatulla and he had been indebted for his rise in the Imperial service to the patronage of Mahābat Khān, but his sense of loyalty revolted at the sight of the latter's treasonable proceedings and he identified himself heart and soul, with the cause of the Empress. His heroic efforts to deliver Jahāngir from captivity are related with evident admiration by the historians. (*Iqbalnāma* 261, 264, Muḥammad Hādi, 405; *Maāṣiru-l-Umarā*. III. 14; Elliot and Dowson. VI. 425-7.) "On the day of the battle on the banks of the Jhelum, he had made an attempt to carry off Jahāngīr, by swimming the river at the head of a small body of horse, but his approach was discovered and it was with difficulty he effected his escape. * * * During the confusion of the battle itself, he had made another attempt to enter the enemy's camp, at an unsuspected point and had penetrated so far that his balls and arrows fell within the tent where Jahāngīr was seated; but the general repulse forced him to retire and he effected his own retreat wounded." (Elphinstone, History of India. Ed. Cowell. 1866, pp. 569–70). The governorship of Bengal was now his reward and the order of appointment seems to have been passed when the Emperor was in Kashmīr and at some time after the Nauroz of the XXIInd

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year. (*Iqbālnāma*, 291 Hādi 419, l. 3 from foot.) Here again, it is significant that the only coins known are of 1037—XXII. (L.M.C. No. 1739.)

All the four known issues of the atelier of Ilhābād exhibit an identical date (1037-XXII), and may be reasonably presumed to have been indebted for their existence to the commands of Bahādur Khān Uzbek whose appointment as Subadār of the province in the XXIInd year is recorded by Mu'atamad Khān and Muḥammad Hādi (Muḥammad Hādi, 420, l. 3).

Bahādur Khān was the title borne by Abul Bey (or Abu Nabi) Uzbek, an old adherent of the Imperial house, whom Jahāngīr had taken under his protection and under whom he had risen quickly and been made Castellan of Qandahār. (*Maāṣir-ul-Umarā* I. 400–1: *Tūzuk*, Trans. I. 224, 234). He had subsequently resigned, on account of an affection of the eyes and gone into retirement, but after the capture of the fortress by Shāh Abbās, he came once more to Court with a view to offer his services and was selected as an auxiliary to the army of Qandahār, which Jahāngīr was always talking of sending, but never sent. (*Tūzuk*, *Ibid.* II. 192, 234). He was one of the numerous adventurers from 'Turān' who flocked to Hindustān in search of honours and emoluments and were ready to side with any party or person who happened to be in command and could satisfy their greed.

A cancer Muhr struck in the Empress' name at Kashmīr in 1034-XX was in the Da Cunha cabinet. Another gold piece exactly like it had been described by Mr. Gibbs, but he thought that the Mint name was Aǰmīr. I have elsewhere (Num. Supp. XLI, p. 20) given reasons for holding that it is really of Kashmīr and Mr. Whitehead has signified his acceptance of the suggestion.

The Ṣūbadār of Kashmīr in Tīr-XX was Mirzā Shāhpūr, entitled A'ataqād Khān, and he was a brother of Nūr Jahān as well as of Āṣaf Khān. The government of that 'Earthly Paradise' had been entrusted to him in the XVIth year of Jahāngīr and he continued to hold power there up to the Vth year of the reign of Shāh Jahān (*Tūzuk*, Trans. II. 216, 269; Muḥammad Hādi, 386; *Maāṣirul Umarā*. I. 180–1).

The known mintages from Patnā are slightly more numerous (7) than those of Akbarnagar, Ilhābād, or Kashmīr, but they exhibit the very same date, 1037–XXII. Here again we find that Mīr Abū Sa'īd who is described as the grandson of 'Itimādud-daula, that is, of Nūr Jahān's father, was nominated governor of Bihār early in the XXIInd year (*Iqbālnāma*, 291; Hādi 420, l. 3). Indeed, these three appointments—those of Fidāi Khān to Bengal, of Bahādūr Khān to Ilhābād, and of Mirzā Abū S'aīd to Bihār appear to have been announced

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on one and the same day and are mentioned one after the other in the course of six lines on the same page in both these authors.

The Government of the Punjāb had been in the hands of Nūr Jahān's father 'Itimādu-d-daula ever since the XIIIth year (1027 A.H.) and appears to have been actually conducted by his Nāibs or deputies (*Tuzuk*, Tr. II. 2) On his death in the XVIth year (1031 A.H.), it was conferred on his son-in-law Qāsim Khān-i-Manīja (*Ibid.* 222, 230). Some time after Jahāngīr's arrival in Lāhor from Kashmir on 25th Shahrīvar. XIX, Qāsim Khān was transferred to Āgra and the Punjāb was given to Āṣaf Khān, the brother of Nūr Jahān (Muḥammad Hādi, 393, l. 16; *Iqbālnāma*, 240). The same chroniclers record that shortly afterwards, (Fravardīn XX), Abū Ṭālib, the son of Āṣaf Khān was ordered to go to Lāhor to carry on the government of the Ṣūba as the Nāib of his father (Muḥammad Hād, 396, l. 10). In Fravardin or Ardibehesht XXI, when the Emperor was in the neighbourhood of Kābul, Sādiq Khān, who was married to another sister of Nūr Jahān and was also her first cousin (*Bādishāhnāma*, I. i, 72 ; *Maāṣirul Umarā*, II. 729) was placed in charge of the province, as Rāja Basū had rebelled and Āṣaf Khān and his son were prisoners in the hands of Mahābat Khān. (Muḥammad Hādi, 408, l. 7.) But on the 7th Ābān of the same year (XXIst), the Sāḥib-Ṣūbagi of the Panjāb was again conferred on Āṣaf Khān who was at the same time appointed 'Wakīl-i-Muṭlaq' or Deputy of the Emperor with absolute powers. (*Ibid.* 412, l. 11; Elliot-Dowson vi 431). Here again, the coincidence is striking, as the coins start in 1034—XIX and run on into 1034—XX, 1035—XX, and 1036—XXI. It will be observed that the governors were all near relatives of the Empress and members of her faction.

We have seen that the administration of the province of Gujarāt had been controlled by the nominees of the prince Shāh Jahān ever since the day on which Jahāngīr arrived in Aḥmadābād (*Tūzuk*, Trans. I. 424.) in the XIIth year. It would also appear that the wealthy city of Sūrat was included in his personal *jāgir* (*Ibid.* II. 267). During his revolt, 'Abdulla Khān and others of the Prince's partisans tried hard to preserve the province for their master, but they were defeated and expelled from the Ṣūba by Ṣafi Khān and other loyalists after a pitched battle near Aḥmadābād in Sha'abān 1032-XVIII R.-June 1623). Shortly after this victory, Ṣafi Khān and his followers marched to Sūrat and laid siege to the Castle, as Shāh Jahān's governor would not deliver it to the adherents of the Emperor. He was, however, obliged at last to capitulate and hand over the castle as well as the government of the city to Ṣafi. The event is not recorded in the Persian chronicles, but there is a circumstantial account of these transactions in the letters of the East India Company's factors

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in the town which have been edited by Sir William Foster (English Factories in India. 1622–23, pp. 257, 279.) The exact date of the surrender is recorded there as 21st October, 1623 A.C. (O.S.) [Ẓilḥaǰǰa. 1032 A.H.] (*Ibid.* 288). The city was after this, under the authority of Ṣafi (or Saif) Khān and his subordinates, and we have seen that he was one of the members of the family clique of which Nūr Jahān was the head.

The earliest coins of the Sūrat Mint show the date 1033—XIX. Now the Hijri year 1033 began according to Wustenfeld's Tables on the 25th of October, 1623 (N.S.) and corresponded to 1 Ābān XVIII R. (Table in Num. Supp. XLI, p. 16.) As the XIXth year of the *Julūs* began on the 29th Jumād I, 1033 A.H., the earliest coins must have been uttered about five months after the surrender of the Castle to the Imperialists. The fact that we possess the issues of 1034, 1035, 1036, and 1037, may be fairly taken to indicate that the Dārogha of the Mint was willing to act according to the orders of Ṣafī Khān.

In a word, Nūr Jahān's coins are not merely numismatic curiosities or rarities. They are also historical memorials. They were struck deliberately with a view to proclaim and parade before the world, the Empress' power and her absolute domination in the State. They were the manifestoes of a party or faction, but their paucity and other limitations indicate that the faction had little or no real hold over the country. Its power rested on the uncertain foundations of a small family clique, and that clique was completely broken up as soon as the breath departed out of the body of the Emperor with whose life her influence was indissolubly bound up.

S. H. Hodivālā

294. The Kashmīr Coins of Aḥmad Shāh and 'Ālamgīr II.

Among the unpublished coins which Mr. Whitehead discovered in the Bhāwalpur Treasury was a Couplet-rupee struck in the name of Aḥmad Shāh at Kashmīr in 1166–5 R. (Num. Supp. XV. 670). About thirty years before, Mr. Rodgers had described a similar coin dated 1162–2R and assigned it to Aḥmad Shāh Durrāni (Rodgers' Collection Catalogue, Lāhor Museum, Part II, p. 167). Mr. Whitehead expressed his doubts as to the correctness of this attribution. He confessed that he did not "know the exact state of politics in Kashmīr in the years 1162 and 1166 A.H.", but he was strongly inclined to think that they belonged to Aḥmad Shāh Mughal "as the style was distinctly Mughal and as the couplet appeared on the rupees of Aḥmad Shāh struck at Imtyāzgarh, where the Durrāni certainly never penetrated". (N.S. XV. p. 670; P.M.C. Introd., xcvii.) I beg permission to point out that there is still another reason which seems to me to be absolutely decisive and that is

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that the Durrāni conquered the Valley only in 1754 A.C., 1167 A.H. (Imperial Gazetteer, Ed. 1908, *S.V.* Kashmīr; Lawrence, The Valley of Kashmīr, *passim.*; Hugel, Travels in Kashmīr and the Punjāb, Ed. 1845, p. 7.)

The issues of 1166–5 R are thus easily accounted for. The really strange thing is that though Afghān rule is known to have been established in the province in 1167 A.H., coins were struck there in the name of 'Ālamgīr II of which three specimens are in the Panjāb Museum, showing the dates 1169–2, 1171–3, and 1174–5 (P.M.C. Nos. 2312–14). The history of Kashmīr during this period is not a matter of general knowledge and the question demands an answer. It may be permissible therefore to invite attention to an explanation which is found in that exceedingly useful cyclopaedia of Mughal history—the *Maāṣiru-l-Umarā*. The following is the substance of what its author tells us:

When the Durrāni King, Aḥmad Shāh, sent 'Abdulla Khān Ishak Aqāsi for the conquest of Kashmīr in 1167 A.H., and the latter wrested it out of the hands of the Ṣūbadar of 'Ālamgīr II, he left as his Deputy in the province 'Abdulla Khān *alias* Khwāja Kīchak, with a body of Afghān troops and conferred the office of Dīwān on Sakjīvan [*recte* Sukhjivan?]. This man was originally a resident of Kābul and a Khatri by caste. He had started in life as a clerk (متصدّي) in the service of Shāh Walī Khān, the Vazīr of Aḥmad Shāh Abdālī and had been sent on one occasion to M'uin-u-l-Mulk, the governor of Lāhor for the realisation of the tribute which the latter had bound himself to pay. After a time Sakjīvan killed the commander of the Afghān army of occupation, threw Khwāja Kīchak into prison and drove him out of the country. He next sent some money to 'Ālamgīr II through the Vazīr 'Imādu-l-mulk [Ghāzīud-dīn II] and obtained a Farmān appointing himself Hākim or governor of the province. He appropriated all the Khāliṣa lands and the Jāgīrs of the Manṣabdārs, but he was otherwise a patron of learning and a good ruler. In 1175 A.H., that is, about the time the Abdāli Shāh inflicted severe chastisement on the Sikhs, [تنبيه براقعي رسانيد], he sent Nūru-d-dīn Khān Durrāni, a cousin of the Vazīr Shāh Wali Khān, with an army against Sakjīvan, the Mughal Ṣūbadār of the province. The latter attempted unsuccessfully to close the passes but was after some resistance defeated and taken prisoner with the members of his family. (*Bibl. Ind.* Text. II. 720–2.)

These coins must have been struck by the command of 'Sakjīvan' to legalise and justify his proceedings and show that he was holding the country on behalf of its ancient lord, the Emperor of Dehlī against the Afghān usurper.

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The date 1174–5 is of course puzzling. Mr. Rodgers says that he had a Rupee of 'Ālamgīr II struck in Kashmīr in his 5th year which bore the date 1173. (J.A.S.B., 1885, p. 72). This Emperor was assassinated in 1173 A.H. There must be an error somewhere, but such mistakes are not uncommon at this period, and I must leave the matter there.

S. H. Hodivālā.

P.S.

Since this article was written, I have found that there is a very similar account of Sukhjivan's rebellion in an English History of the Punjāb published by W. H. Allen and Co., in 1846 (Vol. I, p. 219).

S. H. H.

295. The Multān Coins of 'Ālamgīr II.

The provinces of Lāhor and Multān were cut off from the Mughal Empire and annexed to his own dominions by the Abdāli ruler of Kābul in 1165 A.H. 1752 A.C. (Elliot and Dowson. VIII. 122–3 and 166–8; Cunningham, History of the Sikhs, Ed. 1849, p. 103 and note, Grant Duff, History of the Mahrattas. Reprint, 1873, p. 278). The latest known Multān coins of Aḥmad Shāh Mughal are the Rupees dated 1164–4 R. (P.M.C. 2728) and the Muhr of 1165–5 R. (P.M.C. 2641; see also Rodgers, J.A.S.B. 1885, p. 70). The earliest known Multān coin of Aḥmad Abdāli is of his 5th regnal year =1165 A.H. (Rodgers, *Ibid.* p. 70). The city then "becomes a Mint town of the Durrānis" (I.M.C. III. lxviii). But Mr. Whitehead found in Bhāwalpūr a Muhr and two Rupees struck in the name of 'Ālamgīr II, (N.S. XI. 338 and 344; XV. 673; P.M.C. 2738 and 2834). He observed at the time that it would be "interesting to know who issued these coins in the last year of that Emperor's reign". In the Panjāb Museum Catalogue also he referred to these strange issues and drew attention to the astonishing fact that "the town was already in the hands of the Durrānis and Rupees of the same year are known of Timūr Shāh, acting as Niẓām for his father" (Introduction, cix).

The fact of the matter is that these revived or belated mintages are coins with a history behind them. They are numismatic reminders of one of the most memorable events in the annals of this country—epigraphs associated with the reckless and unscrupulous proceedings of Mīr Shahābud-din (otherwise called 'Imādul-Mulk and Ghāzīuddīn II), which provoked two terrible visitations from over the border and ended in breaking to pieces the crumbling fabric of the Mughal Empire and shattering the Mahrātta power also on the fateful field of Pānipat.

The story of these events can be read at length in Grant Duff's History of the Mahrattas, Ch. XXI, Cunningham's

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History of the Sikhs, Ed. 1849, pp. 100–107, Elliot and Dowson VIII. 240ff., or Elphinstone's History of India, Ed. Cowell Book XII. Ch. IV. It will suffice to give here a summary for which I am mainly indebted to the first of these authors.

Ghāzīu-d-din II was the grandson of the first Niẓāmu-l-Mulk Āṣaf Jāh. After deposing and blinding Aḥmad Shāh and raising 'Alamgīr II to the throne, he conceived the design of recovering the Panjāb which had been surrendered to the Durrāni monarch by M'uinu-l-Mulk (Mīr Mannū) after his third invasion (1165 A.H.). Aḥmad Shāh Abdāli had soon afterwards seen the wisdom of taking the late Mughal governor into his own service. He gave him the title of Farzand Khān (E.D. VIII., 168) and appointed him Ṣubadār or Ḥākim, on his own behalf, of the conquered territories. On Mīr Mannū's death, his infant son was confirmed in the governorship under the guardianship of his mother. When the child also died, the lady continued to rule as before. Ghazīu-d-dīn II had been affianced to her daughter, and on the pretext of fetching his bride home, he marched upon Lāhor and contrived to make his mother-in-law a prisoner while she was in bed. She was then deprived of the government and carried off to Dehli and the province was given in charge of the perfidious Adīna Beg. The Abdāli provoked by these outrageous proceedings led his fourth invasion (1170 A.H.), re-conquered both the provinces, and marched to Dehli, in plundering which "all the horrors of Nādir Shāh's invasion were repeated," 7th Jumad I. 1170 A.H. (E.D. VIII. 241). A cruel massacre of the devotees at Mathura followed, and the invader retreated only on account of the outbreak of a virulent epidemic in his camp (E.D. VIII, 265). Before doing so, he appointed his son Taimūr Shāh, as Viceroy of the Panjāb and Najību-d-daula as Mīr Bakhshi and Amīru-l-Umarā of the Empire. But as soon as the Durrāni's back was turned, Ghāzi-ud-dīn deprived Najīb of all his offices and honours and bestowed them upon his own partisan, Aḥmadkhān Bangāsh. As the Emperor and Najību-d-daula made common cause against him, Ghāzīu-d-dīn II invited the assistance of Raghunāthrāo Mahratta and with his help once more made himself master of Dehli and the Emperor's person.

Jahān Khān, the minister and adviser of Taimūr Shāh Durrāni had for a time called into his councils, Adīna Beg with a view to profit by his knowledge of the resources and administration of the country. But Adīna Beg soon grew suspicious of Jahān Khān's designs, refused to go to Lāhor and flying to the mountains, raised not only the Sikhs against the Afghāns, but called in the Mahrattas. Raghunāth Rāo who was longing for an opportunity to do something grand at once entered the country, defeated the Abdāli's governor of Sarhind and entered Lāhor in triumph. May,

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1758 A.C. = Sha'abān 1171 A.H., (E.D. VIII. 267; Cunningham, 106). Adīna Beg was now made Sar-Subadār of the Panjāb on the part of the Mahrattas and a Mahratta garrison was left for his support. But he died soon afterwards, it is said of cholera, and was succeeded by a 'native Mahratta'.

Aḥmad Shāh Abdāli was at this time occupied in quelling some disturbances in his own country and several months elapsed before he could invade Hindustan once more. But he crossed the Indus in Muḥarram 1173 A.H. and advanced into the Panjāb. Ghāziuddin then had 'Ālamgīr II assassinated on the 8th of Rabīu-s-ṣāni 1173, A.H. and raised Shāh Jahān II to the throne. Meanwhile, Multān and Lāhor had been evacuated by the Mahrattas on the approach of the Shāh, who also overpowered Sindia and Holkar, one after the other, and once more occupied Dehli. It is not necessary for the purpose of this article to narrate the events which followed or the life and death struggle which terminated with the defeat of the Mahrattas at Pānīpat on 7th January, 1761 A.C. = Jumādā II. 1174 A.H.

It will be observed that the coins bear the dates in 1172-7 and 1173-7. We have also seen that the Mahrattas entered Lāhor in Sha'abān 1171 A.H. and that the Durrāni Shāh crossed the Indus in Muḥarram 1173. In the circumstances, it is fairly clear that they must have been struck by the Mahrattas in the name of the Emperor to signify the nominal reversion of the province to the throne of Dehli.

S. H. Hodivālā.

296. Coins Exhibited at the Annual Meeting of the N.S.I. at Benāres in January 1929.

(1) Euthydemos (Bactrian).

A round copper coin showing the head of Zeus and prancing horse.

Unchronicled in dichalkon size; the smaller chalkous is illustrated in B.M.C. II 8.

(2) Eukratides (Indo-Greek).

A square copper coin varied from the type B.M.C. VI 3 with the monogram on reverse.

The king wears an unusual flat kausia-shaped helmet and there is a palm branch behind his head instead of the helmet-plume on the normal type.

(3) Artemidoros (Indo-Greek).

Drachm of the type P.M.L.C. VII 553. The obverse shows an irregularly shaped countermark containing a minute monogram . This monogram is very similar to which

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Mr. Whitehead considers may stand for Taxila (Num. Chrom. 1923, pp. 313, 4).

Counter-marked coins of this period are very unusual, the writer only knows of two others, both of these being of Demetrios—vide Cunningham's "Coins of Alexander's successors" Pl. IV 4 and B.M. Cat. p. 6 No. 8.

(4, 5) Azilises (Indo-Scythian).

Two square copper coins of a new sub-type:—

Elephant to right and bull to left, showing different monograms:—

No. 4. Obv. Rev. .

No. 5. Obv. Rev. rubbed.

The Greek legends are very debased but are obviously intended for the normal *ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ ΑΖΙΛΙΣΟΥ*

The other varieties of this king's elephant and bull coins are P.M.L.C. p. 139 No. 363 Elephant l and bull l. and No. 364 Elephant r and bull r.

(6) Spalarises (Indo-Scythian).

A square copper coin of type B.M.C. XXII 2.

This is restruck on a coin of Azilises, probably of type B.M.C. XXI 1, and is an additional link confirming that the chronological place of this group of kings is that assumed by Professor Rapson in the Cambridge History of India.

(7) Zeionises (Indo-Scythian).

A tetradrachm of type B.M.C. XXIII 4 with previously unchronicled legends. Unfortunately that on the obverse is too fragmentary to permit of a reading. That on the reverse, however, is clearly "[Mani-] gulasa putrasa Mahachhatra [-pasa Jihuniassa]".

This coin is the only evidence we have to show that Zeionises had gained promotion from Satrap to Great Satrap.

(8) Kanishka (Kushan).

A large copper coin with reverse type MIIPO, varied from B.M.C. p. 134, Nos. 48-50 in showing an additional monogram on the obverse beside the altar in the left field.

This is an addition to the series with obverse monogram which includes MAO reverse B.M.C. p. 133 No. 39 and P.M.L.C. XVIII 76, and NANA reverse listed by Cunningham in N.C. XII pl. VII No. 15. These coins are as a rule, better executed than those of the normal type with monogram on the reverse only.

(9) Huvishka (Kushan).

A large copper coin of type Elephant-rider to r. and Goddess with cornucopiae (Ardochsho) to r. with legend MAO. This is varied from P.M.L.C. page 199, No. 146 as the goddess faces right instead of left The writer found it, together with three specimens of P.M.L.C. No. 146 near Shinkiari, Mansehra Tahsīl, Hazāra District, N.W.F.P.

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(10) Late Kushan.

A large copper coin of the usual Huvishka type (elephant-rider and deity) but with bilingual legends in Kharoṣṭhi and Brahmi.

Obverse:—King, holding ankus, riding elephant to right. Kh. legend "ṣichhati akusa....."

Reverse:—Archer, standing l., looking backwards over his left shoulder and holding vertically in his right hand a long bow with string inwards, in his left hand an arrow (?) with point resting on ground. To l. monogram and Brahmi legend "Ganesha."

Rāi Bahādur Rāmaprasād Chāndā of the Indian Museum, Calcutta, has very kindly permitted me to publish his readings of the legends of this coin. He suggests that the Kharoṣṭhi legend on the obverse is equivalent to the sanskrit "Śikshayati Aṅkuśena" (trains the elephant by a goad).

The close relationship between the obverse type and this legend is reminiscent of the practice on Gupta coins, vide "The coins of India" (Heritage of India series) by C. J. Brown, page 45.

The reverse type and legend show very close kinship with two coins described by Vincent Smith—J.A.S.B. Part I. 1897, page 3 Pl. I. 6 and I.M.C. page 81 No. 46 pl. XIII. 4.

This remarkable coin, probably dating from early in the third century A.D. is, I believe, of a later date than any other Indian coin with a Kharoṣṭhi legend, and at the same time must rank among the earliest of those late Kushan coins which have an inscription in Brahmi.

(11) Phraates II (Parthian).

A drachm of the usual type but with an unchronicled variation in the order of the legend on the left which reads

$$\frac{\theta EO\Pi ATOPO\Sigma}{APΣAKOY}$$ instead of $$\frac{APΣAKOY}{\theta EO\Pi ATOPO\Sigma}.$$

(12) (?) Volagases I (Parthian).

A barbarous drachm of doubtful attribution. The treatment of the hair and diadem is very similar to that on a copper coin of Volagases I (B.M.C. XXIX, 10) and the moustache and beard are similar to those on tetradrachms of the same king dating from 55-58 A.D. (B.M.C. XXVIII, 13, 14). The coin shows a countermark of a helmeted head to left on the neck of the king. Both the countermark and the reverse design are very barbarous. The legend is so debased that it is unintelligible. The monogram is .

This coin was obtained from Balkh. Other Parthian drachms with comparable countermarks are also probably from

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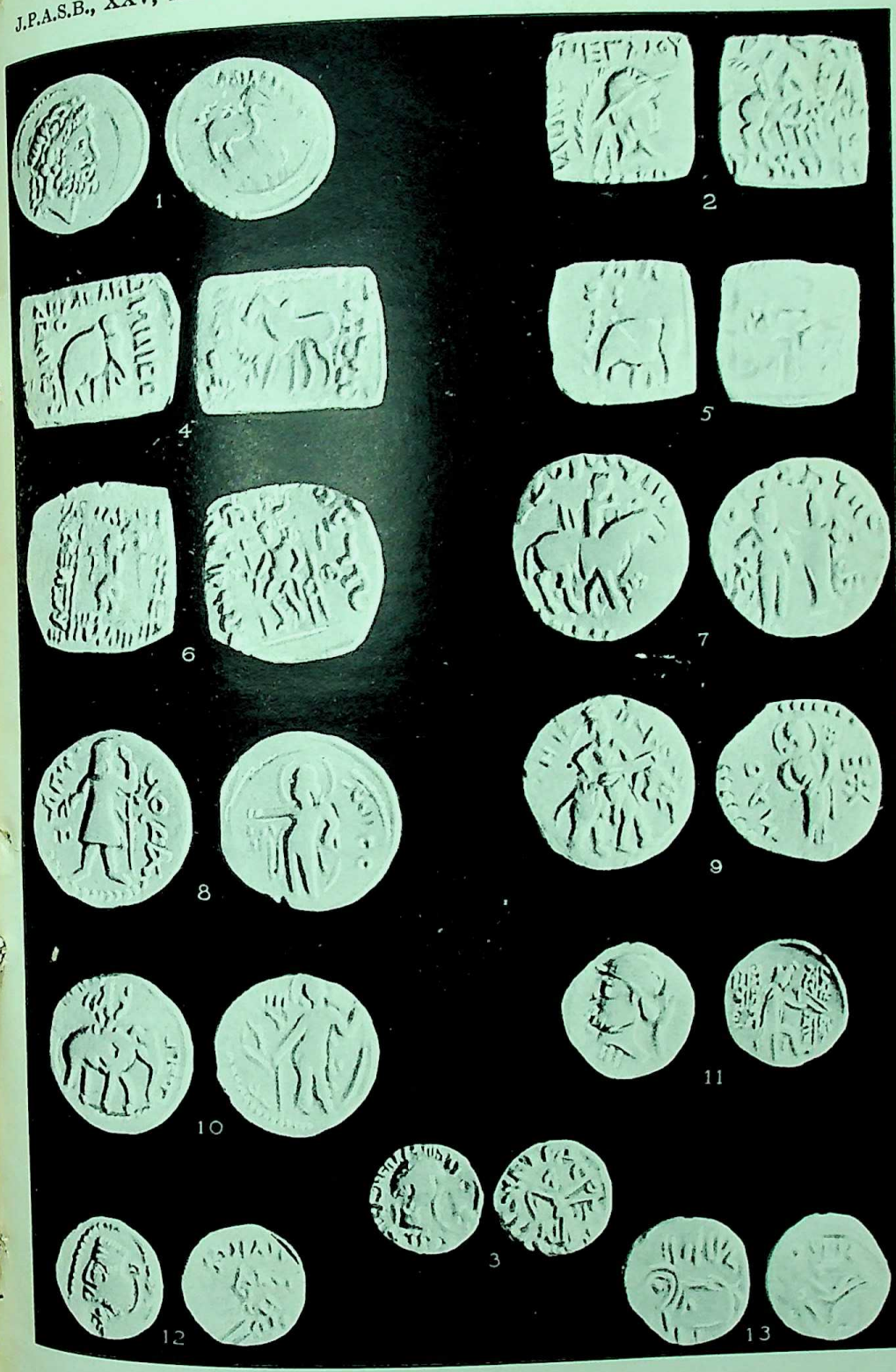

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the same district :—Drachms of Phraates III (B.M.C. XI 4, 5) show the name *OTANNEΣ*, and countermarked drachms of Phraates IV (B.M.C. XXI 4, 5 and 6) have been attributed to Sapaleizes. The coin under discussion was probably also struck by one of the early Yueh-chi princes. Warwick Wroth (B.M.C. p. 167 footnote) has drawn attention to the similarity between the coins of Sanabares (another of these obscure rulers) and some barbarous drachms of Gotarzes.

(13) Tāju-d-din Yalduz (General of Muḥammad Bim Sām). A copper coin of the elephant and lion type of the Hindu Shāhis with the usual Sanskrit legend "Sri Samanta Deva" and additional Kufic legends :—*Obverse :*—يلدز on body of the elephant.

Reverse :—الفتح above the lion.

This is the only known coin of the elephant and lion type struck by a Muḥammadan invader of India.

M. F. C. Martin.

297. Some Rare Ghaznavid Coins.

1. Manṣūr II bin Nūḥ (A.H. 387-389) was the last of the Sāmānid princes, and had a short reign, being soon supplanted by Maḥmūd of Ghazni.

Very few of his coins are known, the British Museum possessing a single dirhem and a dinār.

The latter unique coin was once in my collection and it is by kind permission of the Keeper of the Coins that I now publish it.

This dinār was struck in 388 A.H. at Herāt, a new mint for Sāmānid coins, but a flourishing city and a popular mint of Maḥmūd of Ghazni from 395 A.H. onwards.

It is not improbable that this coin was struck by Maḥmūd, who minted coins in the Sāmānid city of Nisābūr in the same year, but it is strange that he did not show his own name as well as that of his Suzerain Manṣūr II. In this course he would have found good precedence in his father's coinage which invariably shows the name of his Sāmānid overlord Nūḥ bin Manṣūr I.

Manṣūr II bin Nūḥ A.H. 387-389.
Æ Dinār Mint Herāt 388 A.H.
W. 64·3 S. 1·0 see Plate.

Obverse :—area.

عبد
لا اله الا
الله وحده
لا شريك له

Reverse :—area.

لله
محمد
رسول الله
الطايع لله
منصور بن نوح

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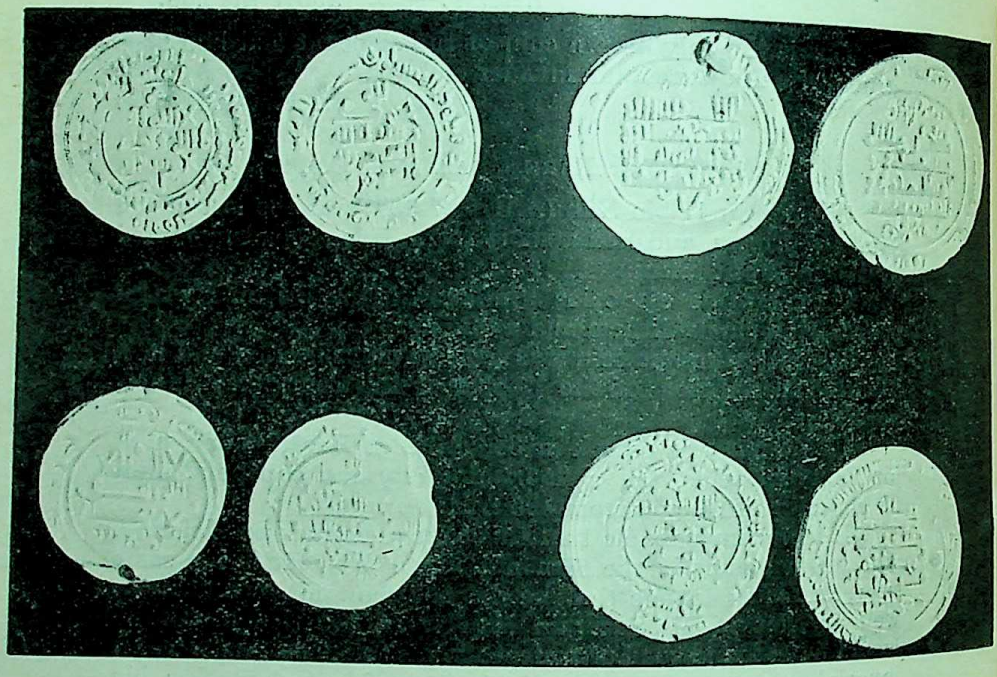
Obverse; inner margin shows usual legend with mint بهراة and date 388.

Obverse; outer margin Qorān XXX 3,4.
Reverse; margin Qorān IX. 33.

2. Mr. Rodgers in Vol. III of his Lāhore Museum Catalogue gives an interesting series of coins struck by Naṣr, brother of Maḥmūd, by Māḥmud in conjunction with Ṭāhir, and

Obv. 1 *Rev.* *Obv.* 2 *Rev.*



Obv. 3 *Rev.* *Obv.* 4 *Rev.*

by the latter's father Wali ud Daulat. As these coins are not generally known, and, as I believe no catalogue shows an illustration of any, I take this opportunity to show my coin of Naṣr on the accompanying plate. The Kufic letters are curiously formed even for this period of crabbed and stilted writing.

NAṢR, brother of Maḥmūd.

Æ Dirhem Mint Siǰistān [40] 1 A.H.
Looped. S. 1.1 see Plate.

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Obverse:—area ornament.

فتح
لا اله الا الله
وحده لا شريك له
القادر بالله
نصر بن ناصر الدين

Reverse:—area ornament.

محمد رسول الله
يمين الدولة و
امين الملة ابو
القاسم يمينى
Ornament

Margin gives mint بسجستان and date. Margin almost illegible.

3. Broad base metal dirhems of Maḥmūd and of his son Mas'aūd I are not uncommon from Nisābūr mint. I now illustrate a coin of similar fabric struck by Mas'aūd I at Bulandshahr, a mint previously unchronicled for the Ghaznavid series. This unpublished coin is remarkable for the clearness of its minute script and for the large number of titles shown by the ruler.

MASAUD I. A.H. 421–432.

Æ Base, dirhem. Mint Bulandshahr—Year rubbed.
W. 55·5 S. 95 see Plate.

Obverse:—area.

عدل
لا اله الا
بالله وحده ح
لا شريك له
القادر بالله
.....

Reverse:—area.

لله
محمد رسول الله
ناصر دين الله حافظ عباد
الله ظهير خليفة الله امير المو
منين ابو سعيد
مسعود

Obverse margin shows part of mint ببلند ش; this may possibly be merely a prefix to a known mint name which is off the coin.

Reverse margin gives Qoran XXX. 3, 4.

NOTES:—(*a*) Characters at either end of obverse line 3 form بخ (-good).

(*b*) Obverse line 6. 3 letters rubbed.

(*c*) Reverse lines 3 and 4. Codrington reads حافظ غيار الله on a Ghaznavid coin. Rodgers' reading of عباد fits in better with this coin.

(*d*) Reverse line 5 clearly shows ابو سعيد not ابو سعد

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4. Gold coins of Farrukhzād are of extreme rarity. I have been fortunate in obtaining two of them recently The first is identical with British Museum Catalogue No. 546, Mint Ghaznih year 44X, but unfortunately is no clearer in the date. The second, which I now illustrate, gives a totally different series of regal titles. It is unique and unpublished.

FARRUKHZĀD. A.H. 444–451.

Æ Dinar	Mint Ghaznih	444 A.H.
W. 68	S. 1·0.	see Plate.

Obverse:—area.

٠ ٢ ٠
سلم
لا اله الا
الله وحده
لا شريك له
القايم بامر الله

Reverse:—area.

لله
محمد
رسول الله
ابو شجاع
فرخزاد
موید امیر

Obverse inner margin gives mint بغزنه and date 444
Obverse outer margin Qoran XXX. 3, 4.
Reverse margin Qoran IX. 33.

I acknowledge with thanks the help given by R. B. Rām Prasād Chāndā and staff of the Indian Museum in helping to decipher the legends on this coin and to R.S. Prayāg Dayāl for preparing the casts.

M. F. C. MARTIN.

ALLAHĀBĀD,
28*th July*, 1929.

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CONTINUATION CONTENTS.

		Page
294.	S. H. Hodivālā. *The Kashmīr Coins of Aḥmad Shāh and ʿĀlamgīr II*	68
295.	S. H. Hodivālā. *The Multān Coins of ʿĀlamgīr II*	70
296.	M. F. C. Martin. *Coins Exhibited at the Annual Meeting of the N.S.I. at Benāres in January*, 1929.	72
297.	M. F. C. Martin. *Some Rare Ghaznavid Coins* .. .. (*Published separately, December 29th*, 1930.)	75

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CONTENTS.

NUMISMATIC SUPPLEMENT NO. XLII (FOR 1929),
ARTICLES 283–297.

		Page
283.	H. E. STAPLETON. *A find of 182 Silver Coins of Kings of the Ḥusainī and Sūrī Dynasties from Raipārā, Thāna Dohar, District Dacca, Eastern Bengal.*	5
284.	P. THORBURN. *Notes on a few rare Indian Coins*	23
285.	K. G. KUNDANGAR. *Āndhra Coins in the Lord Irwin Agricultural Museum, Kolhāpūr.*	30
286.	DURGĀ PRASĀD. *A Silver Coin struck in Nepāl in the name of 'Alā-ud-din Muḥammad Shāh Khilji.*	37
287.	V. D. B. TĀRĀPOREVĀLĀ. *Aurangzeb's Rupee of Dāru-s-Surūr-i-Burhānpūr*	39
288.	C. R. SINGHAL. *Coins of Nāṣīr Shāh of Gujarāt*	40
289.	S. H. HODIVĀLĀ. *The Unassigned Coins of Jalāl Shāh Sultāni* ..	41
290.	S. H. HODIVĀLĀ. *Shashkāni or Shashgāni*	46
291.	S. H. HODIVĀLĀ. *Akbarpūr-Tānda and Akbarpūr*	54
292.	S. H. HODIVĀLĀ. *The Chronology of the Zodiacal Coins. A Postscript.*	57
293.	S. H. HODIVĀLĀ. *The Coins bearing the name of Nūr Jahān* ..	59

(For continuation see overleaf.)

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1932.

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(*a*) To be present and vote at all General Meetings, which are held on the first Monday in each month except in September and October.
(*b*) To propose and second candidates for Ordinary Membership.
(*c*) To introduce visitors at the Ordinary General Meetings and to the grounds and public rooms of the Society during the hours they are open to members.
(*d*) To have personal access to the Library and other public rooms of the Society, and to examine its collections.
(*e*) To take out books, plates, and manuscripts from the Library.
(*f*) To receive *gratis* copies of the *Journal and Proceedings* and *Memoirs* of the Society.
(*g*) To fill any office in the Society on being duly elected thereto.

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Proceedings
of the
Asiatic Society of Bengal
for 1928.

[*Journal and Proceedings of the Asiatic Society of Bengal.*]

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Proceedings, Asiatic Society of Bengal, 1928.

CONTENTS.

		Page
1.	Proceedings, Annual Meeting, 1929	v
	Annual Address, 1928-29	x
	Patron's Address	xxxviii
	Officers and Members of Council, 1929	xl
	Exhibition, Annual Meeting	xli
	Annual Report, 1928	xlix
	Membership Statistics, 1899–1928	lxxvi
	List of Publications, 1928	lxxvii
	Abstract Statement of Receipts and Disbursements, 1928 ..	lxxix
	Abstract Proceedings Council, 1928	cix
2.	List of Patrons, Officers, Council Members, etc., 1928 ..	cxxix
	Patrons	cxxx
	Officers and Members of Council, 1928	cxxxi
	Officers and Members of Council, 1929	cxxxii
	Ordinary Members, alphabetically	cxxxiii
	Ordinary Members, chronologically	clvii
	Life Members, chronologically	clxiii
	Associate Members	clxiv
	Ordinary Fellows	clxiv
	Special Honorary Centenary Member	clxv
	Honorary Fellows	clxv
	Changes in Membership	clxvi
	Loss of Members, 1928	clxvii
	Elliott Gold Medal, recipients	clxix
	Barclay Memorial Medal, recipients	clxix
	Sir William Jones Memorial Medal, recipient	clxx
	Annandale Memorial Medal, recipient	clxx
3.	Proceedings, Ordinary Monthly Meetings, 1928	clxxi
	Obituary Notices	cxcviii
4.	Proceedings, Medical Section Meetings, 1928	cci

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PROCEEDINGS OF THE ANNUAL MEETING, 1929.

The Annual Meeting of the Asiatic Society of Bengal was held on Monday, the 4th February, 1929, at 5-30 P.M.

Present:

HIS EXCELLENCY, COLONEL THE RIGHT HON'BLE SIR FRANCIS STANLEY JACKSON, P.C., G.C.I.E., Governor of Bengal, Patron.

RAI UPENDRA NATH BRAHMACHARI, BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members:

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Banerjee, Mr. Abinas Chandra
Banerjee, Mr. S. K.
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Chaudhuri, Mr. J. N.
Chopra, Lt.-Col. R. N.
Choprha, Mr. Gopichand
Christie, Dr. W. A. K.
Clegg, Mr. E. L. G.
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Connor, Sir Frank
Coyajee, Sir J. C.
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Das, Dr. Kedernath
Das-Gupta, Mr. H. C.
De, Mr. B.
De, Mr. K. C.
Deb, Kumar, H. K.
Deb, Raja Kshitindra
Dikkers, Mr. F. G.
Dikshit, Mr. K. N.
Dods, Mr. W. K.
Elberg, Mrs. A. A. J.
Ezra, Sir David
Forrester, Mrs. F. Campbell
Gangoly, Mr. O. C.
Ghose, Mr. Justice C. C., Kt.
Ghose, Mr. T. P.
Ghosh, Mr. Justice B. B.
Ghosh, Mr. P. N.
Ghosal, Mr. U. N.
Ghuznavi, Sir A. K.
Ghuznavi, Mr. I. S. K.
Gupta, Mr. N.
Gupta, Mr. S. N.
Hawes, Mr. G. L.
Hidayat Hosain, Dr. M.
Hobbs, Mr. Harry
Hubert, Mr. Otto
Insch, Mr. Jas.
Ishaque, Mr. Mohammed
Jain, Mr. Chhotelal
Jones, Mr. H. Cecil
Knowles, Lt.-Col. R.
Kramrisch, Miss Stella
Law, Dr. S. C.
Manen, Mr. Johan van
Mitra, Mr. J. C.
Mitter, Mr. Justice D. N.
Mookerjee, Mr. S. C.
Mukherjee, Mr. H. N.
Mukherjee, Dr. J. N.
Mukherjee, Dr. S. K.
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Seth, Mr. Mesrovb Jacob
Sircar, Mr. Ganapati
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Sharif, Mr. M.
Shastri, MM. Haraprasad
Sohoni, Mr. V. V.
Stagg, Major M.
Stapleton, Mr. H. E.
Suhrawardy, Mr. Justice Z. R. Z., Kt.
Tagore, Mr. R. M.
Ukil, Dr. A. C.
Watling, Mr. R. G.
Young, Rev. A. Willifer.

and many others.

Visitors :

Aken, Mr. C. E. van
Bakker, Mr. P. J.
Banerjee, Mr. B. K.
Banerjee, Mr. R.
Banerjee, Mr. S. C.
Basak, Dr. M. N.
Basu, Mr. S.
Bhattacharjee, Mr. A. C.
Bhattacharjee, Mr. Dasaratha
Bhattacharjee, Mr. H. N.
Biswas, Mr. J. M.
Biswas, Mr. Sarat Lal
Bose, Mr. J. N.
Brinkman, Mr. F. L.
Bunshoten, Mr. D. J.
Bunshoten, Mrs.
Carroll, Mr. C.
Chakravarti, Mr. C.
Chakravarti, Mrs. L. P.
Chartres, Mr. C. B.
Chatterji, Mr. D.
Chowdhury, Mr. A. Aziz
Cleghorn, Miss O.
Clough, Mr. J. A.
Cooper, Mr. B. M.
Cross, Mr. W. J.
Cross, Mrs.
Das, Mr. B. K.
Das, Mr. Sukumar Ranjan
Das-Gupta, Mr. H. N.
De, Major J. C.
Dhandup, Mr. Tshering
Dorjee, Mr. Tashi
Dutt, Mr. A.
Egmond, Mr. G. van
Elberg, Mr. P. M.
Ezra, Lady
Fawcus, Mr. L. R.
Fernandez, Rt. Rev. Mgr. J.
Gangooly, Mr. P.
Ghose, Mr. D. C.
Ghosh, Mr. Batakrishna
Ghosh, Dr. J. N.
Gonggryp, Mrs. E. G.
Gooding, Mr. G. C.
Gooding, Mrs.
Goswami, Mr. K. G.
Gupta, Mr. G. G.
Gupta, Mrs.
Hopwood, Mr. A. T.
Huidobro, Senor Marcos G.
Islam, Mr. M. Z.
Jennings, Mr. R. B.
Jennings, Mrs.
Jackson, Mrs. Ann
Kets, Mr. Alfons
Khan, Mr. N. A.
Kyles, Rev. David
Lahiri, Mr. H. M.
Majumdar, Mr. B. K.
Mitchell, Rev. J. D.
Mitra, Mr. J. N.
Mitter, Dr. A.
Molekamp, Mr. B. K.
Molekamp, Mrs.
Mookerjee, Mr. R. C.
Mozumdar, Mr. N. N.
Mitter, Mrs. J.
Nahapiet, Miss Pearl
Nahapiet, Mr. N. S.
Pasricha, Capt. C. L.
Paul, Mr. K. S.
Roy, Mrs. Kamini
Saha, Mr. G.
Saha, Mr. R. N.
Sarawagee, Mr. Baboolal
Sarkar, Mr. B. N.
Sarkar, Mr. Jadu Nath
Sarkar, Mr. Sudhir Kumar
Seth, Dr. S. J.
Sewell, Mrs. D.
Singh, Mr. C. L.
Singh, Mrs.
Sinha, Mr. S. C.
Sirivardhene, Mr. P. P.
Srinivasan, Mr. T. D.
Stapleton, Mrs. N.
Stewart, Lt.-Col. A. D.
Stewart, Mrs.
Stork, Mr. W. (Jr.)
Strong, Mr. F. W.
Strong, Mrs.
Sur, Mr. Atul Krishna
Turmes, Rev. Fr. P.

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Vermeire, Rev. Fr. M.
Ward, Mr. A. W.
Watkinson, Mr. K. F.
Watkinson, Mrs.
Webber, Mrs. W.
Weston, Mr. A. T.
Weston, Mrs.

and many others.

The President ordered the distribution of the voting papers for the election of Officers and Members of Council for 1929, as well as the voting papers for the election of Ordinary Fellows proposed by Council, and appointed Major M. Stagg and Mr. Kalipada Biswas to be scrutineers.

The President also ordered the distribution of copies of the Annual Report for 1928 and called on the General Secretary to make a few remarks upon it.

The Annual Report was then presented. (See page xlix.)

At 5-55 p.m., the President vacated the Chair and invited Dr. W. A. K. Christie to occupy it during his absence from the room.

The President, the Treasurer, and the General Secretary then left the meeting room to receive His Excellency Colonel the Right Hon'ble Sir Francis Stanley Jackson, Governor of Bengal, Patron of the Society, at the entrance of the building.

On the arrival of the Patron at 6 p.m., the President introduced the Council to him and thereupon addressed to him the following words of welcome :—

"In the name of the Society, I bid your Excellency welcome in our midst and give expression to our sense of great satisfaction that we have the privilege of your presence this evening. Affairs of state prevented your Excellency's attendance in our previous Annual Meeting. We rejoice that you are with us this time, and wish to assure you that our deferred welcome is all the heartier now, as since your arrival amongst us, you have made us add to the respect for your high office our high regards for your person.

Once more, your Excellency, our heartiest welcome.

I would now request your Excellency to do us the honour of taking the Chair."

After his installation in the Chair, the Patron called on the retiring President to read his Annual Address.

The retiring President then addressed the meeting. (See page x.)

The retiring President then called upon the scrutineers to, report, and announced the results of the Council election. (See page xl.)

The President for 1929 then thanked the Society for his re-election as follows :—

"Ladies and Gentlemen, I have to thank you most heartily for the honour you have done me by re-electing me your President for the ensuing year.

I will add no words other than those necessary to say that

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it will be my strenuous endeavour, during the new year, to serve the Society so that its usefulness, its renown and its powers may grow, and so that the cause of learning in this land and beyond its borders may be truly promoted."

It is now my privilege to invite our Patron, His Excellency the Governor of Bengal, to address us.

The Patron then addressed the meeting. (See page xxxviii.)

After the reading of the Patron's address, the President thanked the Patron in the following words :—

"Ladies and Gentlemen, I now rise to propose a cordial vote of thanks to our Patron, His Excellency the Governor of Bengal.

Every one familiar with the strenuous social life of the winter season in Calcutta knows that the time and physical strength of the Governor are so fully taxed that any fulfilment of social obligations in February must to him be a heavy burden indeed. His Excellency, however, has neither grudged us his time nor spared his forces in accepting our invitation. And that his kindness in coming to us this evening is not an act of courtesy alone, highly valuable as that would already be, has been made abundantly clear to us by the encouraging and sympathetic words of the address to which we have listened and which so clearly show his interest in our affairs, which, in fact, serve only the interests of learning and the increase of knowledge. We are genuinely grateful to His Excellency for his valued recognition of our endeavours, for so kindly upholding the long tradition of intimate relations between the Asiatic Society of Bengal and Government House, and we only hope that the meeting of this evening may have demonstrated to our Patron that here in Bengal is an institution of which India may be proud, which has deserved well of the past, and which yet has a great future before it.

Ladies and Gentlemen, I now ask you to signify your assent to these remarks by carrying by acclamation a hearty vote of thanks to His Excellency."

The vote of thanks having been adopted by acclamation, the President made the following announcements :—

"I have now the great pleasure to announce that having heard the report of the scrutineers, I declare the following Ordinary Members: Mr. A. Howard, Dr. J. H. Hutton and Sir Edward Maclagan duly elected as Ordinary Fellows of the Asiatic Society of Bengal."

"I have next to announce that the Trustees of the Elliott Prize report that they have decided that no paper submitted in competition for the award this year has been judged of sufficient merit to be awarded the medal.

Next year's prize will be for Chemistry."

"My next announcement regards the Sir William Jones

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Medal. The Medal is awarded to Sir George Grierson for Asiatic Researches in Philology.

Sir George Grierson is the oldest living relation of the Society. He joined as an Ordinary Member in 1876, more than half a century ago, and is since 1904 one of our Honorary Fellows. His contributions to the *Journal* and the *Memoirs* of the Society and to its *Bibliotheca Indica* series have been numerous and valuable. Even last year we have published of him an admirable translation and edition of a Kashmiri work, and three more works by him are at present in the press.

But the greatest claim of Sir George Grierson, who is now in his 79th year, to a permanent niche in the hall of fame, is his work on the monumental Linguistic Survey of India, which after the uninterrupted and devoted labour of thirty years he has terminated in 1928 in twenty large quarto volumes, and by the completion of which alone he has earned the title of Father of Indian Linguistics of our times.

We regret that he cannot be amongst us this evening to hear our expressions of affection and admiration, but he has asked another old and famous veteran, Mahamahopadhyaya Haraprasad Shastri, only a few years younger than he in years and membership, to represent him in this gathering to receive the Sir William Jones Medal on his behalf.

We are glad that the Shastri is present to give added lustre to the occasion, and we affectionately welcome back our beloved veteran for the first time after an accident last year, which has so unfortunately restricted his movements and which has deprived us so long of his presence.

Sir William Jones, Sir George Grierson and Mahamahopadhyaya Haraprasad Shastri,—here is a trinity of names of which we are proud.

I now request his Excellency to be so good as to hand the Medal to our Shastri on behalf of Sir George Grierson."

After the bestowal of the Medal, the President declared the Annual Meeting to be dissolved in the following words:—

"Ladies and Gentlemen, in declaring the Annual Meeting dissolved, I invite the non-members present to examine a collection of exhibits at the other side of the hall, and the members present to re-assemble around this table for an Ordinary Monthly Meeting for the transaction of business and the Election of Members."

After this final announcement, the President conducted the Patron for examination of the exhibits. (For a descriptive list of the exhibits, see page xli.)

At 7 p.m., the Patron left the meeting, conducted by the President, after which an Ordinary Monthly Meeting was held for the transaction of business by Members, whilst the visitors inspected the exhibits.

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ANNUAL ADDRESS, 1928-29.

YOUR EXCELLENCY, LADIES, AND GENTLEMEN,

In rising to address you at the anniversary meeting as President of your Society, I feel proud that I have been judged by you worthy to occupy an office which is associated with the names of many who have honoured our country. When I recall to mind the names of SIR WILLIAM JONES, SIR JOHN SHORE, H. T. COLEBROOKE, THE EARL OF MOIRA, THE MARQUIS OF HASTINGS, SIR C. E. GREY, SIR E. RYAN, H. T. PRINSEP, SIR JAMES COLVILE, A. GROTE, SIR ASHLEY EDEN, RAJA RAJENDRA LALA MITRA, W. T. BLANFORD, SIR ASHUTOSH MUKERJEE and other famous men who have preceded me in this Presidential Chair and when I look round this hall and see the faces, in busts of marble or bronze, on canvas, on photographs, of some of these great men, I feel that I cannot compete with them in greatness or position. But I should not honour your choice, which has placed me in this high and dignified position, if I did not wish to prove myself at least their equal in a fervent desire to discharge efficiently my duties as President to the credit of the Society, and to the advancement of science or literature.

The Code of Laws of the Society of 1869 provided for an annual address from the Chair and in obedience to this Code I propose to address this meeting on a subject which I hope will be of interest to all of you.

My subject will be: CERTAIN ASPECTS OF THE ACTIVITIES OF THE ASIATIC SOCIETY OF BENGAL, ITS EARLY MEMBERS, AND ITS FUTURE NEEDS.

But before addressing you on this subject my first duty is to return my thanks and to express my feelings of gratitude to those gentlemen who constituted the Council last year. Especially to my friend Mr. JOHAN VAN MANEN, the General Secretary, I am highly indebted for his cordial co-operation and hearty assistance. To him I looked for aid in my inexperience and for assistance in remedying my deficiencies. I am sure that owing to him our affairs have not suffered from any incompetency on my part. I feel equal gratitude towards the other Members of the Council. They have applied themselves so unremittingly to the discharge of the large amount of business devolving upon them and examined all questions placed before them so thoroughly, that there has been little room for difference of opinion, whereby they have rendered the onerous duty of the President comparatively easy and free from anxiety.

It is customary for the President at the annual meeting of the Society to refer to the loss of Members of the Society by

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death during the course of the year, but as the Secretary has already done so, I will here do no more than respectfully salute their memories.

Our Beginnings.

I now proceed to my address.

In doing so I must preface my remarks with a general acknowledgment that their substance and sometimes their wording have been derived from published sources. My merit, if merit there be, is only that of having strung the dispersed information together into one compact and coherent whole. I may quote Montaigne's apology for what I have to say: Gentlemen, I here present to you a bunch of flowers culled in diverse places: mine is only the string that binds them.

It is strange to notice that in a country where in ancient times existed famous seats of learning such as Taxila before or at the beginning of the Christian Era, Ujjain in the early centuries of the same Era, Ayodhia, Nalanda, Pataliputra and Valabhi during the Gupta period, Benares, and later on Mithila in Bihar, Sringeri in Mysore, and Navadwip in Bengal, and where the love of learning has exercised a vast and powerful influence, systematic scientific or literary research was almost non-existent towards the end of the 18th century at the time when the Asiatic Society was founded.

The few names that I shall mention among the early Members of our Society have been chosen, more or less promiscuously, and I ask your pardon if I do not give here more than a very brief review of their work or mention only a few from the vast array of illustrious men who adorned our Society in those days.

The origin of the Asiatic Society of Bengal is more definite than that of many other illustrious institutions of its kind. As stated by Richard Weld in his history of the Royal Society of London, the origin of that body is enwrapped in some obscurity.

On the 15th January, 1784, Sir William Jones delivered in Calcutta a learned and suggestive discourse on the institution of a Society, for inquiring into the History, Civil and Natural, the Antiquities, Arts, Sciences, and Literature of Asia, in a meeting consisting of the *élite* of the European Community of this city. I make the following extracts from the glowing remarks he made in this discourse about his ideas of an Asiatic Society, the seeds of which were already germinating in his mind before he landed in India.

"When I was at sea last August, on my voyage to this country, which I had long and ardently desired to visit, I found one evening, on inspecting the observations of the day, that *India* lay before us, and *Persia* on our left, whilst a breeze from *Arabia* blew nearly on our stern. A situation so pleasing in

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itself, and to me so new, could not fail to awaken a train of reflections in a mind, which had early been accustomed to contemplate with delight the eventful histories and agreeable fictions of this Eastern world. It gave me inexpressible pleasure to find myself in the midst of so noble an amphitheatre, almost encircled by the vast regions of Asia, which has ever been esteemed the nurse of sciences, the inventress of delightful and useful arts, the scene of glorious actions, fertile in the productions of human genius, abounding in natural wonders, and infinitely diversified in the forms of religion and government, in the laws, manners, customs, and languages, as well as in the features and complexions of men. I could not help remarking, how important and extensive a field was yet unexplored, and how many solid advantages unimproved."

Small as was the beginning, the founder of the Asiatic Society truly foretold that "An institution so likely to afford entertainment, and convey knowledge, to mankind, will advance to maturity by slow, yet certain degrees." Its beginning was not smaller than that of the Royal Society of London, which was at first a meeting of only a few literary friends at Oxford, rising gradually to that splendid zenith, at which a Halley was its Secretary, and a Newton its President, and standing to-day pre-eminent among similar institutions within the British Empire and elsewhere.

Some of our Distinguished Members.

The reputation of Sir William Jones, the founder, during his lifetime, was immense. His personal character was high, and his amiability of manners made him widely beloved. His sympathy with Orientals and their ideas were especially noteworthy. He was regarded as a prodigy of learning, on account of the extraordinary range of his knowledge. He is said to have known thirteen languages thoroughly, and twenty-eight fairly well. He was the pioneer of Sanskrit learning, and his memory is cherished by all Oriental scholars. His eleven anniversary discourses as President of the Society, and his contributions to the *Asiatic Researches*, mark an era in the study of the Indian languages, literature, and philosophy. There is a marble bust of Jones by Weekes in the Society's room and a monument, consisting of his statue by Bacon, in St. Paul's Cathedral, London. He died in Calcutta and on the eastern face of the Monument over his grave are the following lines written by himself:

"Here was deposited the mortal part of a man,
who feared God, but not death,
and maintained independence,
but sought not riches; who thought
none below him but the base and unjust;
none above him but the wise and virtuous:

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who loved
his parents, kindred, friends, and country,
with an ardour
which was the chief source of
all his pleasures and all his pains:
and who having devoted
his life to their service, and to
the improvement of his mind, resigned it calmly,
giving glory to his Creator,
wishing peace on earth,
and with goodwill to all creatures."

Among the other foundation Members of the Society, we have the names of CHAMBERS, Chief Justice Supreme Court of Calcutta, HYDE, Judge of the Supreme Court of Calcutta, ANDERSON, Political resident at Scindia and subsequently President of the Committee of Revenue, SHORE, subsequently Viceroy and Governor-General of India, GLADWIN, first Professor of Persian at the College of Fort William, WILKINS, a great orientalist and the first Englishman to acquire a thorough knowledge of Sanskrit, and subsequently the first Librarian of the India House Library, DUNCAN, Governor of Bombay, BRISTOW, Resident at Lucknow, who subsequently assumed there the powers of Government, BURROW, Orientalist, a distinguished mathematician and astronomer, of the Survey of Bengal, and BARLOW Vice-President of the Supreme Council and subsequently Governor of Madras.

Among the first Patrons in 1784 were WARREN HASTINGS, and the Members of Council of Fort William in Bengal. In 1789 LORD CORNWALLIS and Members of the Supreme Council were the Patrons of the Society.

By the time the General Committee of Public Instruction was appointed in Bengal by an order of Government conveyed in their letter dated 31st July, 1823, and long before the establishment of the Indian Universities, the activities of the Asiatic Society of Bengal were already great. It is significant to note that the first President of the Committee of Public Instruction in Bengal, J. H. HARINGTON, was the Secretary of our Society when it was founded and subsequently in 1825 he was its President, and of the nine other persons composing the first Committee BAYLEY, H. T. PRINSEP, and H. H. WILSON, were Members of our Society. E. RYAN, one of our early presidents was afterwards the President of the above Committee.

Time does not permit me to give an account of H. T. PRINSEP's strenuous opposition to LORD MACAULAY's famous minute in 1835 on Education in India, but it is evident that PRINSEP as an eminent orientalist was all along struggling to keep up a study of the ancient arts, sciences, and literature of India, which was the noble object of the founder of our Society with which he was intimately connected. He could not bear

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any measures calculated to discourage the study of such subjects by the people of the country. He naturally disagreed with the decision to discontinue financial support to students studying in Madrassas. Nor could he entertain any idea of interference with the existence of institutions of this type.

To-day, we find the institution of chairs of ancient Indian History and Culture, of Sanskritic and Islamic studies, as well as instruction through the medium of Indian Vernaculars in the Universities, and all these point to a swinging of the pendulum towards all that PRINSEP fought for. I find from his note dated 15th February, 1835, quoted in Sharp's *Selections from Educational Records*, that to him, "out of the same philosophy, that is in the highest point of knowledge in Arabic and Sanskrit, grew the philosophy of Bacon, Locke, and Newton."

Let me now mention in brief the work of COLEBROOKE. This distinguished Member was one of our early Presidents. He was a signatory to Lord Minto's Minute on Education in India in 1811. He published a translation of the Lilawati and Vija-Ganita, Sanskrit treatises on Arithmetic, Algebra and Mensuration, to which was prefixed a dissertation on the early History of Algebra and Arithmetic in India, Arabia, and Italy. This dessertation is equally remarkable for its profound knowledge of Hindu and Arabic literature and its correct views of the relations between oriental and ancient and modern European science. He was also the first person who maintained, from his own observations on the plains of Hindustan, the superior elevation of the Himalayan Mountains above the Andes of America, in opposition to the opinions generally entertained at that period, and which had been sanctioned by the great authority of Humboldt's theory of the range of the curve of perpetual congelation. His opinion afterwards received complete confirmation, from accurate barometrical and trigonometrical measurements.

He also wrote on the Indian and Arabian Division of the Signs of the Zodiac, and on the Notions of the Hindu Astronomers on the Precession of the Equinoxes and the Motions of the Planets.

I shall not refer here to his voluminous observations on Indian Philosophy and Literature, including Sanskrit Grammar, for which his name will remain immortal throughout generations to come. He was one of the founders of the Asiatic and Astronomical Societies in England, and a short time before his death he made over to the library of the India House his incomparable collection of Sanskrit and Asiatic manuscripts, which had been collected at an expense of nearly £10,000, with the noble view of preserving them for ever from the danger of dispersion by the fluctuating accidents of inheritance. As stated in 1837 by His Royal Highness the DUKE OF SUSSEX, President of the Royal Society, COLEBROOKE was probably with

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one single exception, the greatest Sanskrit scholar of his age and one can unhesitatingly pronounce him as one of the most illustrious of the extraordinary succession of great men who adorned the annals of British India about the beginning of the nineteenth century.

JAMES PRINSEP, another illustrious Member of our Society, was a man of great energy of character, of the most indefatigable industry, and of very extraordinary accomplishments. He was an excellent assayist and analytical chemist, and well acquainted with almost every department of physical science; a draughtsman, an engraver, an architect, and an engineer; a good Oriental scholar, and one of the most profound and learned Oriental medallists of his time. His services to the Asiatic Society were of unparalleled importance, and his administration was the most brilliant and successful in its annals. Besides contributing largely to numismatics and to science, he won for himself an imperishable name as the discoverer, and first decipherer, of the ancient alphabets of India.

In 1828, he communicated to our Society a paper "On the Measurement of High Temperatures," in which he described amongst other ingenious contrivances an air thermometer for ascertaining the order of high temperatures, and for the determination of the temperature at which silver enters into fusion, and he made a series of experimental researches on the depression of the wet-bulb hygrometer.

His activity whilst resident at Benares has more the air of romance than reality. He designed and built a mint and other edifices; he repaired the minarets of the great mosque of AURENGZEBE, which threatened destruction to the neighbouring houses; he drained the city and made a statistical survey of it, and illustrated by his own beautiful drawings and lithographs the most remarkable objects which the city and its neighbourhood contained. He determined from his own experiments the values of the principal coins of the East, and drew up tables of Indian metrology and numismatics, of the chronology of the Indian systems, and of the genealogies of Indian dynasties, which possess the highest authority and value.

He was the projector and editor of the *Journal* of our Society to which he contributed more than one hundred articles on a vast variety of subjects, but more particularly on Indian coins and Indian Palæography. He first succeeded in deciphering the legends which appear on the reverse of the Great Bactrian coins, on the ancient coins of Surat, and on those of the Hindu princes of Lahore and their Mahomedan successors, and drew up alphabets of them, by which they could be readily perused. He traced the varieties of the Devanagari alphabet on the temples and columns of Upper India to

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a date anterior to the third century before Christ, and was enabled to read on the rocks of Cuttock and Gujarat the names of Antiochus and Ptolemy, and the record of the intercourse of an Indian monarch with the neighbouring princes of Persia and Egypt; he ascertained that, at the period of ALEXANDER'S conquest, India was under the sway of Buddhist sovereigns and Buddhist institutions, and that the earliest monarchs of India were not associated with a Brahman creed or dynasty. These discoveries threw a perfectly new and unexpected light upon Indian history and chronology, and furnished a satisfactory outline of the history of India, from the invasion of ALEXANDER to that of MOHAMMED GHAZNI, a period of fifteen centuries, and were only second in interest and importance, and we may add likewise in difficulty, to those of Champollion with respect to the succession of dynasties in ancient Egypt.

Prinsep's life of usefulness was cut short at the early age of forty-one. The cause of literature and archæology in the East could not have sustained a more severe loss than his death.

Our Society testified its respect for the services of the great man by voting a bust, and one finds to-day near Fort William in Calcutta a magnificent ghat, "erected to the honour of JAMES PRINSEP by his fellow citizens."

How important were the researches of the Members of our Society in its early days is evident from the fact that the researches of our Members together with similar ones conducted by Fellows of the Royal Society of London formed the subjects of recognition at the Presidential addresses at the latter's anniversary meetings from time to time.

While on Nov. 30, 1838, His Royal Highness, the DUKE OF SUSSEX was referring to the work of some of the Fellows of the Royal Society on the Law of Storms and on Tides, similar work had already been or was being done by Members of our Society, PIDDINGTON on the Law of Storms, and KYD and NOTON on Tides, and their observations were published in our *Journal* or *Asiatic Researches*.

Remarking on the work of EVEREST, one of our distinguished Members, the MARQUIS OF NORTHAMPTON at the anniversary meeting of the Royal Society in 1847, in testifying to the work of EVEREST, stated that out of the three very important works issued at that time from the British press, the measurement of sections of the Meridional Arc in India was highly important in itself, and honourable to the scientific ability of General EVEREST, who carried it through. He pointed out that the Royal Society watched with keen interest and high regard work of this nature which would tend to promote the cause of natural knowledge and do honour to the science of Great Britain. The work on the Meridional Arc was commenced in India in 1804,

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by LAMBTON, the father of the great Indian Survey, EVEREST'S Chief, and also an illustrious Member of our Society, and by the year 1815 the survey had become one of the largest ever made in any country. LORD MINTO commenting on the work of LAMBTON spoke of it as "containing matter of high importance to the interests of science, and furnishing so many new proofs of the eminent endowments and indefatigable exertions which have long distinguished the character and labours of its respectable and meritorious author." The papers of these authors were published in our *Asiatic Researches*.

I have the high authority of SIR JOHN HERSCHEL in stating that the Great Meridional Arc of India was a trophy of which any nation, or any government of the world, would have reason to be proud. EVEREST was so indefatigable, that his contemporaries, playing on his name, were accustomed to speak of him as *Neverrest*. In the *Asiatic Researches* among many scientific details, he gives a few particulars of his personal adventures in the carrying on of his work—of the severe measures by which he disciplined his Indian followers and quelled a mutiny among them; of separation from his instruments and provisions by sudden floods; of the explorations through wild jungles in search of favourable observing stations; of journeyings through vast and magnificent forests where, more to be dreaded than tiger or hyæna, lurked the deadly typhus (probably pernicious malaria) which prostrated him and his whole following. For months he was so weak that he had to be supported by two men while taking his observations with the great theodolite, and could not reach out his hand to the screw of the vertical circle without assistance; yet, though advised to resort to the coast, he persevered in his task, having a conviction that his absence would be fatal to its prosecution. His name having been given to the highest summit of the Himalayan range has been immortalised.

While in November 1850, the EARL OF ROSSE was conferring a Copley medal on Professor Hansen and stated that it was a remarkable fact that the author had been engaged in the construction of new lunar tables, in 1841 SHORTREDE, a Member of the Asiatic Society, had already constructed a table which showed at once, without calculation, the mean times of new and full Moon, etc., as also the Moon's age to the nearest day, along with a Companion to the Moon Table, which was constructed in order to have the times of true as well as of mean new and full Moon.

Lt.-General SABINE, in the Presidential address to the Royal Society of London in 1866, referred to the work of Captain BASEVI, a Member of our Society, on experiments with the pendulum, the results of which were communicated to him by Colonel WALKER, Superintendent of the Indian Trigonometrical Survey.

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W. T. BLANFORD was one of our most distinguished Presidents. In the anniversary meeting of the Royal Society of London in 1901 the President while awarding the Royal Medal of the Society to him referred to his valuable work on the "Geographical Distribution of Animals," to his important memoirs on the rocks of India and Australia, to works on other kindred subjects, and to his addresses on "Geological Nomenclature" and the "Permanence or otherwise of Ocean Basins." In the first-mentioned address he laid down the principles and established the conclusions which gave a new aspect to the study of the geographical distribution of animals. His *Fauna of India* published under the authority of the Secretary of State for India in Council was looked upon as the standard authority on Indian vertebrates. His contributions to this work constituted his special claim to a Royal Medal. He was one of the few men who were regarded as an authority in Geology, Palæontology as well as Zoology, to each of which he made many important contributions.

Amongst the early Members of our Society, a large proportion were attached to the profession of Medicine, as was the case with the Royal Society of London, as stated by Richard Weld in his book already referred to. As a medical man, I am particularly proud of this fact, because some of our medical Members showed their versatile genius in different departments of science and arts in a most remarkable way. The name of AINSLIE is well known to us medical men in Bengal. He was a superintending surgeon and wrote classical works on cholera, fever, the Materia Medica of Hindustan, Materia Medica Indica, and similar subjects.

I now speak of FALCONER. Coming to India in 1830 as an Assistant Surgeon he subsequently began his researches in Palæontology in which he soon became an authority. His extensive collections of Indian fossils with the collections presented by Capt. CAUTLEY formed one of the distinguishing characteristics in the Palæontological gallery of the British Museum. In 1852, he published a memoir recommending the introduction of cinchona plantation in India in the hilly regions in Bengal and the Nilgiris in southern India. It was he, who in 1834 reported on the fitness of India for the growth of the tea plant of China and to-day the tea of Bengal has become one of the most important commercial exports in India and cinchona plantation is thriving here. At the time of his death he was a Vice-President of the Royal Society of London and Foreign Secretary of the Geological Society. As a proof of the high esteem in which he was held by his many friends, the Falconer Fellowship was founded in the University of Edinburgh, and a marble bust was presented to the Royal Society. Another bust of his has been set up in the rooms of the Asiatic Society of Bengal.

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I now pass on to mention to you the name of Dr. H. H. WILSON. He arrived in Calcutta in the Medical Service of the East India Company. I incorporate the following extracts about him from the Centenary Review of our Society: He was Secretary to our Society for several years. He first attracted public notice by an elegant translation of the *Meghaduta*, which was published in 1813. It was followed in rapid succession by other works, among which his *Theatre of the Hindus* and the *Sanskrit-English Dictionary* deserve especial mention. He contributed also largely to the periodical literature of the day, and to the Asiatic and the Medical and Physical Societies. In 1816, he was appointed Assay Master of the Calcutta Mint, which office he held to the last day of his sojourn in Calcutta. He had the bulk of the eighteen *Purāṇas* translated into English, out of which he selected the *Vishnu Purāṇa* for publication. He was the first person who was appointed to the Chair of Boden Professor of Sanskrit at Oxford in 1823, shortly after its creation. His literary labours in England were incessant, and within a week before his death he completed his translation of the fourth volume of the *Rig Veda* and a critical review of Max Müller's *Vedic Literature*. His name stands conspicuous on the roll of those whose genius and labours have contributed to enlighten the literary world on the early history and civilization of the Hindu race. His connection with the Society extended over a quarter of a century, and during that period the stability and credit of the Society were thoroughly established. The manuscript of Wilson's Sanskrit-English Dictionary is still preserved in the Archives of our Society.

WALLICH, another illustrious Member of our Society, was connected with the Royal Botanical Gardens near Calcutta. I shall speak of him later on.

Gentlemen, let me now mention the illustrious name of my countryman RAJA RAJENDRALALA MITRA. I quote here extracts from his obituary notice from the presidential address of SIR ALFRED CROFT. Originally, a medical student, he afterwards turned to the study of various languages. He was a scholar of European fame. His connection with the Society extended over a period of nearly half a century. Entering it, when a young man, as Assistant Secretary and Librarian, his commanding abilities and untiring industry soon brought him into prominence; and while we may congratulate ourselves that it was this Society which first gave him the opportunity of satisfying his inexhaustible craving for knowledge, we must gratefully admit that he amply repaid the debt by the contributions that he made to Oriental learning, and by the lustre that his name and attainments shed upon the Society, of which he was one of the most distinguished in the long roll of Presidents. His eminence in the field of learning was recognised by the University of Calcutta, which conferred upon him the honorary degree

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of Doctor in Law. His most enduring title of fame lies in the work which he has done, the extent and solidity of which are acknowledged, not only within the walls of this Society, or even in India, but wherever in the civilised world Oriental scholarship is valued. When the Centenary Review of the Researches of the Society was in preparation in 1883, Dr. RAJENDRALALA MITRA was at once selected as the man to write its history. It was an appropriate and happy choice, and the duty laid upon him and cheerfully undertaken was admirably discharged.

The utility of the Centenary Volume has been demonstrated by experience. It was a model for another undertaking of this nature. It is gratifying to note that the Centenary Volume of the Royal Asiatic Society of London was based upon ours.

Gentlemen, I cannot end this portion of my address without referring to one of the most illustrious Members of our Society in recent times and one of the greatest of our countrymen, SIR ASUTOSH MOOKERJEE. He was elected fifteen times as Vice-President and four times as President of our Society. He represented the Society as a Member of the Board of Trustees of the Indian Museum for more than 17 years. In one year he was a Member of all the Committees of our Society. He discharged the onerous duties of all his offices with the most scrupulous and constant care. He was highly respected in our Council meetings, and acknowledged as our strongest man. His character, his manners, and his qualities were pre-eminent. He had broad and high visions and noble aims. He was humble in a frank, straightforward and genuine manner, yet he was always strong. He was the greatest organiser, inspirer, and leader of educated Bengal in his days. He was one of the most distinguished Vice-Chancellors of the University of Calcutta, whose progress during his tenure of office was wonderful. There is no doubt that Bengal has lost in his death one of her greatest sons. He was a Member of our Society for 38 years. His bust in bronze executed by Harold I. Youngman adorns our rooms.

Gentlemen, I have given you some short notes on the activities of a few of the early Members of our Society. I have omitted many. Let me draw your attention to the fact that in the early years of its foundation the highly educated men, who came out in the civil, the medical, and the military services of the East India Company, notwithstanding the heavy duties they had to discharge in their respective spheres, contributed largely to the efficiency, the stability, and the advancement of the Society by their literary labours and scientific researches. The Members of the Civil Services took a very prominent position in this respect. The dignitaries of the English Church were much interested in an institution which is identified with the great continent from which all the religions of the world have sprung. In its early days all the Bishops of

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Calcutta were Members of the Society and some of them were its Vice-Presidents. The Roman Catholic Archbishop, the Most Revd. Dr GOETHALS, an historian of merit, was likewise our Vice-President for several years. The military profession contributed to the Society many of its distinguished men. Some, again, of the most renowned men of the Society belonged to the legal, the medical and the engineering professions. A very important part was played by the Members who belonged to the various "Surveys." The merchant princes in Calcutta took part in its activities. The owner of Fonthill Abbey was one of the Members of the Physical Committee of the Society as early as 1808.

I am convinced that I shall be far from wrong if I say that the earliest scientific researches in India on Western lines started with the Asiatic Society of Bengal.

Being one of the oldest Scientific Institutions in the world and certainly the oldest in India, its publications were the earliest main vehicle of information for scientific work in India. Previous to the publications of the Geological and Zoological Surveys of India the Society's Transactions were the principal channel of communication for studies in Indian Geology and Zoology.

When the Asiatic Society of Bengal was formed, the Biological and Geological Sciences all over the world were in a state of transition. The end of the eighteenth century was the beginning of the history of Modern Natural Science. Even in these very early days the Members of the Asiatic Society made substantial contributions to these sciences. Some of them, especially those who came out to India in the scientific branches of the Military Service, were high class mathematicians.

As early as 1808, only one year after the foundation of the Geological Society of London and only eighteen years after Werner propounded to his pupils at Freiburg his doctrine of "Formations," a Committee of the Asiatic Society was formed "to propose such plans and carry on such correspondence as might seem best suited to promote the knowledge of Natural History, Philosophy, Medicine, improvements of the Arts and Sciences and whatever is comprehended in the general term Physics." Though the Committee did not prosper for some time, it set itself to work most energetically under the auspices of SIR EDWARD RYAN and Mr. JAMES CALDER in 1828, and hardly a year had passed before materials were ready to fill 266 pages of a quarto volume with maps, plates and charts. They constituted the first part of the eighteenth volume of the *Researches* published in 1829.

In these researches the Mineralogy and Geology of Hindustan received most attention. VOYSEY who was the father of Indian Geology, OLDHAM who created the Geological Survey of India, and the results of whose observations were

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communicated to the Society by the Government of Bengal, LAMBTON who was the father of the great Indian Survey and first Superintendent of the Trigonometrical Survey of India, NEWBOLD who was the ablest geologist of his day in India, and SCHWENDLER who was one of the principal founders of the Zoological Gardens, near Calcutta, were Members of the Asiatic Society and made valuable contributions to its publications. FALCONER, CAUTLEY, COLVIN, BAKER, DURAND, and SPILSBERY were among the Society's most ardent and energetic early contributors.

At a meeting of the Natural History Committee of the Society, held on the 11th of February, 1862, Mr. A. GROTE, then President of the Society, made a proposal for bringing together collections of crania illustrative of the various peoples inhabiting India and the adjacent countries; and a circular letter was issued soliciting the co-operation of Members and others towards this object.

In December, 1865, Dr. J. FAYRER submitted to the Society a proposal for a grand Ethnological Exhibition in Calcutta, which would afford the anthropologist an opportunity for the systematic study of the various races of the Old World. The idea was cordially approved by the Society.

Colonel DALTON proposed "to draw up an account of the tribes in Bengal from all available sources of information." The proposal was warmly received by the Society, and the Council gave Colonel DALTON all the assistance in their power. The result was the publication in 1872 of "*The Ethnology of Bengal.*"

The Government of India, at the suggestion of our Society, consented to call upon its officers in all parts of India to submit lists of the races and tribes found in the various districts, and SIR GEORGE (then Mr. Justice) CAMPBELL, with a view to assist the collation of such data, drew up a capital general account of the Ethnology of India.

The Society has been ever forward in the promotion of any scientific movement that has been set on foot in this country. It was under its superintendence that the boring operations in Calcutta, revealing the geological structure of Lower Bengal, were conducted. With its help or instrumentality the investigations of FRANKLIN, HUTTON, CSOMA DE KÖRÖS and a host of other explorers were carried on.

The early publication by which the Society's *Transactions* secured publicity for the observations of cultured travellers like MOORCROFT, GERARD, HODGSON, in remote parts of India and the adjacent countries, stimulated and helped other explorers; and it is thus that a considerable portion of our accessions to geographical and ethnological knowledge has been effected. The grand series of the Mammalian Fauna of the Sub-Himalayas, the Narbada Valley, and Perim Island

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owe their collection and elucidation, in no small degree, to the warm encouragement and cordial assistance of the Asiatic Society.

Other Institutions and their Relations with our Society.

The Asiatic Society, gentlemen, was founded for the advancement of knowledge, not for any purposes of private advantage or vainglory. It has, therefore, always hailed the foundation and prosperity of new bodies of scientific or literary men, brought together by the same object in particular branches of science or literature. It cannot but rejoice at the foundation of various societies which have sprung up in India or abroad as daughter institutions since its foundation.

I now proceed to give an account of the part played by the Asiatic Society of Bengal and its Members in the founding of scientific, literary and educational institutions in Bengal and elsewhere.

Asiatic Societies in India and abroad.

The Asiatic Society of Bengal can take pride in being the parent institution of other Asiatic Societies in India and abroad.

It was through its activities, when Colebrooke was its President, that the seeds of the Royal Asiatic Society of Great Britain and Ireland, which came into existence in 1823, were sown.

The Bombay Society was established in 1827, that of Ceylon in 1845. The effects of our Society's labours have been felt far beyond the limits of the British Empire and of the English tongue. We were the pioneers in that field of research in which the scholars of France and Germany have since achieved such splendid triumphs; and across the Atlantic the stimulus of the investigations of our Society quickened into sympathetic activity the intelligence and industry of the Oriental Societies of the United States of America.

The Bihar and Orissa Research Society has been established in more recent times.

The Linguistic Survey of India.

I have the high authority of Sir George Grierson in stating that the Linguistic Survey of India owed much to the Asiatic Society of Bengal for the encouragement accorded to its conception and for advice and guidance freely given to it in its earlier years.

The Royal Botanical Gardens at Sibpur.

Though it cannot be stated that the Society directly played any part in the establishment of the Royal Botanical Gardens

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at Sibpur, yet there is no doubt that the activities of the members of our Society in the work of the Botanical Gardens were very great from the very beginning of its foundation.

SIR WILLIAM JONES called Botany "the loveliest and most copious division in the Science of Nature." Two years after the establishment of the Asiatic Society, the Botanical Gardens were established at Calcutta (Sibpur). The munificent patronage of the East India Company enabled a distinguished and most active Member of our Society to make magnificent discoveries in the vegetable kingdom. This was ROXBURGH. He was the father of Indian Botany—the Indian Linnaeus and one of the earliest Superintendents of the Calcutta Botanical Gardens. He was the first botanist who drew up a systematic account of the plants of India. His monument is in the Royal Botanical Gardens at Sibpur.

He was succeeded by WALLICH, another distinguished Member of our Society. A Dane coming out to India as Surgeon to the Danish Settlement of Serampur, he was taken prisoner when that place was captured by the English. His reputation as a botanist induced the Government not only to liberate him but to place him in charge of the Botanical Gardens in 1815.

It may be said of him that he returned from India after 40 years of such incessant trial as has scarcely ever been paralleled in the history of Botanical science and that no one ever applied to WALLICH in vain, nor was a book of any importance published on Botany in Europe within the last thirty years of his life, in which WALLICH'S name was not prominently introduced. He was the first to introduce the art of lithography into the East.

I shall not detain you in giving an account of illustrious botanists who adorned our Society in more recent times, such as KING, GAMBLE, PRAIN, and GAGE. PRAIN is to-day a Vice-President and Treasurer of the Royal Society of London.

The Indian Museum.

Out of the Asiatic Society, as is well known, was evolved the great Indian Museum which stands next-door in all its splendour.

As early as 1796, the Society announced its intention of establishing a museum, and invited donations. But it was not until the beginning of 1814 that any steps were taken to carry out that intention. Contributions of animals, plants, minerals, etc., were solicited; and arrangements were made for their reception. By the year 1835, the collections had grown to great dimensions.

Later on the Zoological collections of the Society were

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transferred to Government, to form the nucleus of an Imperial Museum of Natural History.

The Society had for a long time become the custodian of an important series of Geological and Palæontological collections which had been yearly growing in richness. In the year 1839, at the December meeting, the then 'Committee of Papers' submitted a Report on the Museum, in which it was stated that the first object of the Society in remodelling its Museum should be to form a grand collection of minerals and fossils, illustrative of the Geology, Geography, and Palæontology of the British Indian Possessions

In 1840, the Geological and Palæontological collections were separated from the rest under the appellation of Museum of Economic Geology, which began to thrive under the care of Mr. PIDDINGTON.

In 1842, the Society succeeded in securing a separate Government grant for the Museum of Economic Geology. The Museum grew under the custody of the Society until 1856, when the Government portion of the collection was transferred to the newly-established Museum in connection with the Geological Survey of India. Later on, a careful inquiry into the condition of the Museum, its growing importance, and the poor accommodation available in their building, impressed the Society with the necessity for the institution of a great public Museum in Calcutta, to which the whole of the Society's collection might be transferred under certain restrictions, as any partial transfer would probably have been detrimental to the accomplishment of this noble object. Negotiations were opened by the Council of the Society with the Government on the subject, which terminated in the establishment of the present Indian Museum, the Society offering to make over its collections on the condition that a suitable building should be erected and that they should be placed under the management of a body of Trustees. These final arrangements were carried out and legally instituted by Act XVII of 1866.

Under the old Act, the Asiatic Society had the privilege of nominating five *ex-officio* Members on the Board of Trustees of the Indian Museum. Since then the number was reduced to one. Under the new Act XVII of 1922: (*1*) *The Trustees shall cause every article in the collections in the said Indian Museum formerly belonging to the Asiatic Society of Bengal and all additions that may hereafter be made thereto otherwise than by purchase under section 6, to be marked and numbered and (subject to the provisions contained in sections 7 and 16) to be kept and preserved in the said Museum with such marks and numbers;* (*2*) *An inventory of such additions shall be made by the said Society, one copy whereof shall be signed by the Trustees and delivered to the said Society, and another copy shall be signed by the Council of the said Society and delivered to the Trustees, and shall be kept*

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by them along with the inventory delivered to the predecessors in office of the Trustees when the said collections were deposited in the said Museum. It has further been enacted that if the Trust constituted by this Act is at any time determined, (a) the collections and additions mentioned in section 11 shall become the property of the said Asiatic Society or their assigns, and (b) all the other collections then in the said Indian Museum shall, save as otherwise provided by section 14, become the property of His Majesty.

It will thus be seen that we are under the Law, still intimately connected with the Indian Museum.

The Zoological Gardens at Alipur.

Mr. SCHWENDLER, who was for many years a most active Member of the Society and took a prominent part in the scientific movements of the day was one of the principal founders of the Zoological Gardens. To-day, the Society still owns the privilege of sending two Members of its Council, the President and Natural History Secretary, as *ex-officio* Members of the Governing Body of the Zoological Gardens. Schwendler's work in connection with the foundation of the Zoological Gardens should never be forgotten.

The Survey of India.

Our relations with the Great Indian Trigonometrical Survey, now called Geodetic Branch of the Survey of India, have been very intimate from the early days of our Society.

As stated before, LAMBTON was the father of the great Trigonometrical Survey of India which was founded in January, 1818. I have already referred to his work on the meridional arc which was subsequently completed by EVEREST. Lieutenant WARREN, one of LAMBTON'S chief assistants, performed a number of interesting experiments in the Maisur country in 1804, to investigate the effects of terrestrial refractions, which are summarized in the ninth volume of the *Researches*. He also instituted a series of valuable astronomical observations at Madras between 1805 and 1815, the results of which he regularly laid before our Society.

In the fourteenth volume of the *Asiatic Researches* there is a paper by Colonel HODGSON on the "Latitudes of places in Hindustan and the Northern Mountains; with Observations of the longitude in the mountains according to immersions and emersions of Jupiter's Satellites." The same volume gives an account of the trigonometrical and astronomical operations undertaken by the surveyors to determine the heights and positions of the principal peaks of the Himalaya Mountains. I have already referred to the work of EVEREST.

A Summary of the work done under the superintendence

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of WAUGH, EVEREST's successor, was communicated to the Asiatic Society in 1862 by Major-General WALKER, who was WAUGH's successor. WALKER also presented the Society with abstracts of the operations of the Trigonometrical Surveys down to 1864.

As stated before, the researches of BASEVI, one of our Members, on the pendulums which were supplied by the Royal Society to the Great Indian Trigonometrical Survey, were communicated by WALKER to the Royal Society and these formed the subject of a reference by Lieut.-General SABINE, President of the Royal Society, in his presidential address in 1866.

During 1867 and 1868, HENNESSEY, one of our Members and HERSCHEL, a son of Sir John Herschel, carried on terrestrial investigations, with the sanction of Major-General WALKER and with apparatuses supplied by the Royal Society, and their work was mentioned by Lieut.-General SABINE in his presidential addresses in 1867 and 1869. In referring to the work of these observers, he pointed out the advantages that would accrue to the Royal Society in working in concert with such a distinguished person and Member of our Society as Major-General WALKER.

His Majesty's Mint.

Our relationship with His Majesty's Mint has also been of a most intimate nature from very early days. As I have stated WILSON was Assay Master of the Mint at Calcutta which office he held to the last day of his sojourn in Calcutta. He was succeeded by JAMES PRINSEP. Of these most ardent and illustrious Members of our Society, I have already spoken and I need not repeat what I have said about them. TENANT, Master of the Mint in later times, was one of our most valuable contributors. His discussions on the famous meridional arc with Arch-Deacon PRATT, his work on the total eclipse of the sun, his work in connection with coining, and converting silver into rupees, and his observations on various systems of weights, are among his valuable contributions. Even to-day we still count the present Master of His Majesty's Mint, Major STAGG, amongst our esteemed Members.

Medical College of Bengal.

Though there are no records to show whether the Asiatic Society played any part in the establishment of the Calcutta Medical College, yet there is no doubt that some of the illustrious Members of the Asiatic Society were among the most distinguished men of the Calcutta Medical College. Among these I mention the names of T. THOMPSON, O'SHAUGHNESSY, and FAYRER, who were active Members of the Society before

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the fifties, and in more recent times we have the illustrious names of KING, CUNNINGHAM, ALCOCK, BOMFORD, PRAIN and ROGERS. ROGERS was a most indefatigable Member of our Society in recent times. He was once our President and to him is due the credit of opening the Medical Section of our Society. He was the founder of the Calcutta School of Tropical Medicine and he may be very aptly called the Father of Tropical Medicine in India. The Asiatic Society has honoured him by electing him an Honorary Fellow. All these men made very substantial contributions to the *Journal* of our Society.

Meteorological Department of the Government of India.

From almost the beginning of the establishment of our Society, meteorological obeservations have been made by our members, and as early as 1785, PEARSE published meteorological records in our *Journal*. Many of our early Members contributed important papers on meteorology which were published in the *Asiatic Researches* or the *Journal*. This year we publish a valuable bibliography by the present meteorologist, one of our Members, Mr. V. V. SOHONI, of all meteorological materials published by our Society since its inception.

The Asiatic Society gave the impetus towards the founding of the above department of the Government. In 1857 STRACHEY, a Vice-President, moved the Society concerning the urgent need of a controlling authority capable of directing and utilizing the works of observers in meteorology in India. In 1865 BLANFORD, an Honorary Secretary of the Society, drew up a final report on Indian Meteorology for the consideration of the Government. This led to the creation of the meteorological department of the Government of India.

The University of Calcutta.

The General Committee of Public Instruction in Bengal was abolished at the end of 1841 and a Council of Education was constituted in its place under orders of Government dated the 12th January, 1842. BIRD who was appointed the first President of this Council was our Vice-President in 1843 and President in 1844, and H. V. BAYLEY who was appointed Secretary to this Council was also our Secretary. One can see from this, how highly the Members of our Society were regarded by the Government in those days.

During the years 1855 and 1856 a scheme for the establishment of a University of Calcutta was prepared and considered by Government, and the University was incorporated under Act No. II of 1857.

It is difficult to trace whether any part was played by the Asiatic Society in the founding of the Calcutta University. It

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is however important to note that out of 29 Fellows of the University of Calcutta appointed by name when it was first founded, not less than 20 were Members of the Asiatic Society of Bengal. COLVILE was the President of the Asiatic Society of Bengal when he was appointed the first Vice-Chancellor of the University in 1857. It was he who introduced the Bill of Incorporation of the University of Calcutta as Act II of 1857 in the Legislative Council. One can easily understand what an important part must have been played in directing the destinies of the University of Calcutta in early days by Members of the Asiatic Society of Bengal.

The Indian Science Congress.

In 1910, when the idea of having an Indian Science Congress was conceived by SIMONSEN and MACMAHON, the only opportunities afforded for scientific discussion in India if we except the meetings of the Asiatic Society of Bengal, were the somewhat irregular conferences promoted by the Government of India, such as, Sanitary Conferences or Conferences of Agricultural Chemists. These were purely official gatherings, and it occurred to the above mentioned scholars that scientific research might be stimulated in India if an annual meeting of workers somewhat on the lines of the British Association could be arranged. They felt that not only would the direct personal contact and association of actual workers be of great value, but also that the general public would be brought to realise the importance and value of scientific research. They decided therefore to obtain the views of other scientists, and in the autumn of 1911 they issued a circular letter on this subject. In 1912, they selected seventeen foremost men of science to act on a committee to arrange for the holding of the first annual meeting. On Saturday, 2nd November, 1912, a conference was held in the rooms of the Asiatic Society of Bengal with the late Sir HENRY HAYDEN in the Chair. The most important resolution of that meeting was that "The Asiatic Society of Bengal be asked to undertake the management of a Science Congress to be held annually." In subsequent years the bonds attaching the Congress to the Society were extremely close but there was no officially defined connection beyond the fact that the Honorary Treasurer and Secretary of the Society were *ex-officio* Members of the Executive Committee, whilst at first the appointment of the Congress Secretaries required the confirmation of the Society's Council. Our Society has acted as its Treasurer, and has met a large part of the cost of its publications and has undertaken nearly all the office routine work. In his presidential address at the Congress last year, SIMONSEN stated that our Society was of incalculable value to the Congress which was deeply indebted to our Council for permitting our Officers,

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especially our General Secretary, Mr. VAN MANEN, to assist in its work. On financial grounds alone he thought that without our aid the Congress could not have survived. He trusted that the unwritten law which bound the Asiatic Society of Bengal and the Congress would continue, since to be associated with an ancient society of such standing, could not but add lustre to the name of the Congress. Let us hope that our relations with this daughter institution of ours may remain permanent and cordial.

The Calcutta School of Tropical Medicine.

It has been very recently brought to the notice of our Council by the General Secretary that the credit of first suggesting the establishment of a School of Tropical Medicine in Calcutta belongs to our late President DR. ANNANDALE. In 1910, he wrote a letter to the President of the Asiatic Society of Bengal, T. H. D. LA TOUCHE, in which he stated that the Council of the Asiatic Society of Bengal would be doing no more than their duty, in attempting to direct public opinion into right channels at a time when an opportunity occurred both of showing reverence to the memory of the late King, Edward the Seventh, and also of benefiting suffering humanity in a way which he himself would have been the first to appreciate. In that letter he stated that nothing would be a more fitting memorial for a practical monarch in the closest sympathy with human suffering than the foundation, in Calcutta, of a School of Tropical Medicine in which many problems of Tropical Hygiene might be studied by the best authorities provided with the necessary apparatus and to which students of medicine, sanitation and cognate subjects would be attracted from other countries. This proposal was referred to the medical section of the Asiatic Society which decided that a sanatorium for consumptives was more urgently needed than that of Tropical School. It was Sir LEONARD ROGERS, who subsequently founded the Calcutta School of Tropical Medicine and realised Dr. ANNANDALE'S suggestion.

At the suggestion of Sir LEONARD ROGERS the Council of the Asiatic Society approved of the transfer of all its medical journals to the library of the Calcutta School of Tropical Medicine. Since its foundation some of the staff of the above institution have taken a keen interest in the Medical Section of our Society. Our sincerest thanks are above all due to Colonel KNOWLES, our Medical Secretary, and Professor of Protozoology, Calcutta School of Tropical Medicine, who has rendered devoted service to the Medical Section of our Society. His indefatigable energy and his success in convening meetings of the section are matters calling for the sincerest congratulation.

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The Geological Survey of India.

The closeness of the relations even to-day between the great Surveys of India and the Society is amply illustrated by the fact that no less than eight of our Fellows belong to the above Survey: Messrs. De La Touche, Middlemiss, Tipper, Fermor, Coggin Brown, Christie, Pascoe, and Pilgrim.

In addition, two of its distinguished Members, Dr. W. A. K. Christie and Mr. G. H. Tipper were my immediate predecessors in the Presidential Chair, not to speak of H. H. Hayden, De La Touche and Sir Thomas Holland who were our Presidents in earlier years.

The Zoological Survey of India.

Our relations with this Survey are at present equally intimate. Dr. Annandale, its Director, was our President a few years ago. Two of its Members are our Fellows: Lt.-Col. Seymour Sewell, the present Director, and Dr. Baini Prashad. Our two Treasurers for the last five years, Dr. Hora and Dr. Baini Prashad belong to this Survey, and several of its Members have held and are holding important places on our Council and have been responsible for great biological and anthropological activity in recent years. Two of its Members, Dr. Annandale and Lt.-Col. Sewell, have each contributed a complete volume to our *Memoirs*.

Our Publications.

I have given in my address a brief summary of a very small portion of the activities of our Society and of the work of a few of its Members in the early days, and that mostly on the scientific side. For a detailed account I would refer you to the *Centenary Review* of the Researches of our Society published in 1885.

I would now briefly refer to our *Asiatic Researches*, our *Transactions*, our *Journal and Proceedings*, our *Memoirs*, and our *Bibliotheca Indica*. They contain most valuable researches in the different branches of knowledge. The merits of our *Journal* need hardly be emphasized. It is one of the oldest and one of the most important of Oriental Journals. The *Bibliotheca Indica* is a remarkable serial publication unsurpassed in the whole of the world. Amongst its contributors are savants whose names are too numerous to mention here. It was started in 1849 and consists to-day of over 1500 fascicles and over 250 works.

I have stated before that in its early days, our *Journal* was the most important channel of communication for scientific work in India to the world.

Though the volumes of our *Journal* and *Memoirs* are increasing daily, yet to those who are interested in them and

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our Society I recall this warning in the language of Sir William Jones: "It (the *Journal*) will flourish, if naturalists, chemists, antiquarians, philologers, and men of science in different parts of Asia, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." Referring to the *Asiatic Researches* I would point out that the work created quite a sensation in the literary world, and the demand for it was so great, that a pirated edition was brought out in England in 1798. The demand for the work was also urgent on the Continent, and a French translation was brought out in Paris under the title of "*Recherches Asiatiques.*" In introducing it to the public, the translator, M. A. Labaume, remarked: "cette collection a inspiré en Angleterre un tel interêt, qu'il est à-peu-près impossible de se procurer aujourdhui un exemplaire de l'édition originale de Calcutta, et qu'il en été fait a Londres trois éditions, qui sont prèsque entièrement épuisées; cependant elles sont fort incorrectes et remplies de fautes importantes." The translation was enriched by a series of valuable notes on the philological and historical papers by M. Langlès, and on the scientific papers by MM. Cuvier, Delambre, Lamarck, and Olivier. The estimation in which the work was then held was thus indicated by the editor: "la plus riche collection de faits qui existe sur l'Inde, ce pays qui attire les premiers regards de ceux qui veulent étudier l'histoire des hommes."

As I stated with regard to our Society, our *Journal* and other publications are not intended for any purpose of private advantage or vainglory. While therefore we congratulate Members of our Society on starting new Journals, we would put it to them seriously to consider whether it is not desirable to concentrate on the oldest scientific Asiatic Journal, which is the *Journal of the Asiatic Society of Bengal.* In my humble opinion, many new Journals could with profit be amalgamated with the Journal of the Asiatic Society of Bengal. Let us not have the repetition of rival journals like the '*India Journal of Science*' of Dr. Corbyn, and the '*Calcutta Journal of Natural History*' of Dr. McLelland, which were started in the early days of our Society.

Could it not also be possible for the various illustrious men of our Society who belong to the various scientific departments of the Government to publish short accounts of their researches in the *Journal of the Asiatic Society*, the full papers being published in their respective official records. I leave these suggestions for the consideration of our Members.

Our future and our needs.

It is not my intention to dilate in detail in this address upon the activities of our Society during the last year. These

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have been admirably reviewed by our General Secretary. Nevertheless, your Excellency, Ladies and Gentlemen, a word about our membership. We are very glad to find that our membership has increased last year inspite of a rigorous application of Rules 37, 38, and 40 of our Society. Yet we continue to require the same cordial support of the personnel connected with the various departments of the Government as we enjoyed in the past. These men took the keenest interest in our Society in early days. It has been stated that the men belonging to the various Government services have nowadays so much official and routine work that they can hardly give time to work of the type that their illustrious predecessors performed in connection with Asiatic Researches. Complicated though may be the mechanism of official work in the present day, when we recall for example that in the early days of the eighteenth century, when the country was in an unsettled state, SAMUEL DAVIS whilst District Judge and Governor-General's Agent at Benares, could be in turns deeply engaged in astronomical researches in his private observatory in his house and in defending himself with a pike against the attacks of Wazir Ali at the top of its staircase, when one remembers under what difficulties people used to work on account of their having to live in insanitary surroundings and amidst disease, when one remembers that in those days the facilities of transport were scanty as compared with the present time, one cannot help thinking that objections of European Government officials, on the ground of excessive work, to joining the Society, are not hard to meet. I therefore appeal to them to join the Society and take interest in it in the same way as their predecessors used to do. I would likewise appeal to the merchant princes of Calcutta to join the Society. Let them follow the example of FARQUHAR, a merchant prince of Calcutta, who was a Member of the Physical Committee of our Society as early as 1808, and of Sir RAJENDRA NATH MOOKERJEE, who was very recently our President, who is to-day one of our Vice-Presidents, and who takes the keenest interest in our welfare. To the intellectual class of my countrymen I make the same appeal and when one remembers that this body of men has enormously increased in recent times, and that research, scientific and literary, spreads and advances in the universities and research institutes in India, I urge the Members of these institutions to join the Society in much larger Members than hitherto. I appeal to Government, and its Members to give support to this institution. In the very early times, the Viceroy and his Council were patrons of the Society, and some of them were Members and even occupied the Presidental Chair from time to time. The Provincial Governors were frequently its Members. Let us hope that all the members of the provincial Governments will

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join the Society and take interest in its affairs, for whatever may be said, Calcutta is still the centre of scientific and literary activity in this land.

Gentlemen, it is very desirable that, though we have nothing to do with politics, it should be maintained that in these days of political awakening in India, the European and the Indian should meet on a common intellectual platform, where they can exchange thoughts and ideas in the pursuit of knowledge. We have bodies of the type of the Calcutta Club, where European and Indian meet on a common social platform. There are many similar societies designed to bring together the East and West. No doubt their aims are worthy and their good effect noticeable. But I say with Sir Thomas Holland that "the only political harmony that is natural, real and permanent is that which enables a student to forget altogether whether his fellow-student is Asiatic or European; that is, when political theories and racial self-consciousness are obliterated by the common pursuit of knowledge merely for its own sake." Sir Thomas, who spoke in London, further said that "if I were asked to quote examples of those who help most to cement the friendship of East and West, I should begin my list, not with political reformers, but with those members of the Bengal Society who still carry on their "Asiatic" research work here—men like Beveridge, Grierson, Vincent Smith, Pargiter and Denison Ross. And among institutions, not those that seek artificially to create political tranquility—not even institutions like the League of Nations, but the Royal Asiatic Society." To these words I would like to add that the same friendship will be still further cemented, if the European and the Indian frequently meet in India on the platform of societies like the Asiatic Society of Bengal. In such a platform there can be no distinction of race or colour, of caste or creed but all races will meet for one common object, namely, the well-being of mankind. The theory that "East is East and West is West and the twain shall never meet" is to my mind an old fossilized idea, not to be entertained. Therefore let the Englishmen and the Indians in India join hands together in the work of the mother of all Asiatic Societies, namely, the Asiatic Society of Bengal, and then there can be no doubt that great advantages will accrue from such a co-operation and that in many instances the work of administration in India will thereby be facilitated.

As I stated last year, the Asiatic Society of Bengal is a national asset to the whole of India. It is really the Asiatic Society of India, and is a focus of unity of the highest order, having as one of its very early emblems the bust of the Founder with the Vedas and a Mandir on one side and the Qoran and a Mosque on the other. I quote here the following note about our Society which I received from one of the most distinguished enquirers who has come to India in recent times:—"I knew of

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its foundations by Sir William Jones and have always taken a special interest in the crusade he initiated to bring together the West and the East by promoting a common interest in the things for which the Asiatic Society stands.''

We may now ask what are the future needs of a Society which has such a glorious tradition behind it and has done so much valuable work in the past.

Your Excellency, Ladies and Gentlemen, ours is not an institution like the universities which are maintained substantially by the Government. It is not an institution like the Indian Research Fund Association which is maintained and controlled by officials from Delhi or Simla. It is not an institution like the Indian Institute of Science at Bangalore which is maintained by the munificence of Tata and the Government. It is not an institution like those that are likely to grow up in the near future by grants from the Government or the Rockfeller Foundation—the recurring expenditure of which will be met by the Government. We are a non-official, autonomous institution, and our activities which are great and must be still greater in the future, require financial aid.

I consider that we should be able to extend our activities by creating a fund for research work to be conducted under our auspices by workers throughout the length and breadth of India, similar to what is done by the Royal Society of London. And for this aid I consider that both the State and the public must co-operate. I have just been reading the Year Book of the Royal Society for 1928 and I find that the donations from the public to the Royal Society between the years 1912–27 amounted to £400,000, which is about 60 lacs of rupees.

May the public spirit of the rich aristocracy of Bengal, of the merchant princes of Calcutta, and of the various professions, rise to a sense of duty towards the Society; or am I to be told that Bengal to-day cannot produce men who can aspire to an emulation of the liberalities of a Roy Chand Prem Chand, a Rash Behari Ghose, a Tarak Nath Palit, a Maharajah of Darbhanga, or a Tata. I am sure such men have not ceased to exist. I would like to see the creation of professorships under the auspices of the Asiatic Society similar to the endowed professorships of the Royal Society of London.

Your Excellency, the fact is that our Society is underendowed. With commendable zeal our predecessors prosecuted their valuable researches, but it has perhaps been overlooked that the material possessions of the Society have accumulated, little by little, to such an extent that the costs of upkeep now make inroads upon the resources of the Society derived from ordinary annual income.

We have a few special endowments for the award of medals for meritorious work in different branches of knowledge. The Sir William Jones medal has been recently created for Asiatic

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Researches, and the Annandale medal for work on Anthropology in Asia. We have recently received an endowment from the Brühl Memorial Committee for creating a medal for Botanical Research. The Local Calcutta Committee of the Indian Science Congress gave us last year a sum of money for the creation of a medal for meritorious scientific work. My friend Dr. SATYA CHURN LAW has recently offered us a sum of money for the creation of a gold medal for meritorious work in Zoology. Similar endowments are likely to come in from time to time in the future.

But I would like it to be known that the capital funds which the Society is free to use for the purpose of creating endowed scholarships or professorships, or for general purposes of the Society, or for increasing our Permanent Reserve Fund and Library Endowment Fund, or for advancing the many objects of the Society in different directions, are very limited indeed.

In this connection I would like specially to express our grateful thanks to Mr. DODS, one of our oldest members and an honoured trustee of the Zoological Gardens, for his very recent generosity in contributing a thousand rupees to our Library Endowment Fund.

The State knows the objects of the Society. I shall, however, express them more elaborately in the language of the Founder to awaken a keener interest in the minds of the public and the State. "It is your design, I conceive, to take an ample space for your learned investigations, bounding them only by the geographical limits of *Asia*; so that, considering *Hindustan* as a centre, you have on your right many important kingdoms in the Eastern peninsula, the ancient and wonderful empire of *China* with all her *Tartarian* dependencies, and that of *Japan*, with the cluster of precious islands, in which many singular curiosities have too long been concealed: before you lies that prodigious chain of mountains, and beyond them the very interesting country of Tibet, and the vast regions of Tartary... On your left are the beautiful and celebrated provinces of *Iran* or *Persia*, the unmeasured and perhaps unmeasurable deserts of *Arabia* and the once flourishing kingdom of *Yemen*, and, farther westward, the *Asiatick* dominions of the *Turkish* sultans; but, since *Egypt* had unquestionably an old connexion with this country, if not with *China*, since the language and literature of the *Abyssinians* bear a manifest affinity to those of *Asia*, since the *Arabian* arms prevailed along the African coast of the *Mediterranean*, and even erected a powerful dynasty on the continent of Europe, you may not be displeased occasionally to follow the streams of *Asiatick* learning a little beyond its natural boundary... If now it be asked, what are the intended objects of our inquiries within these spacious limits, we answer, MAN and NATURE, whatever is performed by the one, or pro-

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duced by the other... You will investigate whatever is rare in the stupendous fabrick of nature, will correct the geography of *Asia* by new observations and discoveries, will trace the annals, and even traditions, of those nations who from time to time have peopled or desolated it; and will bring to light their various forms of government, with their institutions civil and religious; you will examine their improvements and methods in arithmetick and geometry, in trigonometry, mensuration, mechanicks; opticks, astronomy, and general physicks; their systems of morality, grammer, rhetorick, and dialectick; their skill in chirurgery and medicine, and their advancement, whatever it may be, in anatomy and chymistry. To this you will add researches into their agriculture, manufactures, trade; and... you... will not neglect those inferiour arts, by which the comforts and even elegances of social life are supplied or improved. ...If to the Persian, Armenian, Turkish, and Arabick, could be added not only the Sanscrit... but even the Chinese, Tartarian, Japanese, and the various insular dialects, an immense mine would then be open, in which we might labour with equal delight and advantage."

It may be held that no society in the world, not even the Royal Society of London, has undertaken such a stupendous task. I ask what state or enlightened citizen is there that would not support such an institution.

Your Excellency, Ladies and Gentlemen, I am afraid I have inflicted upon you a lengthy speech.

I thank you for your patience in listening to it and I would ask you to tell the world that, in the language of Oriental imagery, within Calcutta is situated this shimmering lake called the Asiatic Society of Bengal, on the surface of whose waters, on a white lotus, the Goddess of Learning displays all her splendour. Here the sun of knowledge shines ever joyfully. From this lake torches of learning and research are carried in all directions. From this lake have sprung up many fountains of knowledge in India and beyond the limits of Asia. Over it the wise spirit of Sir William Jones has watched faithfully as the inspiring and guiding genius for nearly a century and a half. May our Society live and prosper and may all who love India love the Asiatic Society of Bengal and honour the memory of the great man who founded it.

U. N. Brahmachari.

4th February, 1929.

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PATRON'S ADDRESS.

SPEECH BY HIS EXCELLENCY SIR STANLEY JACKSON, GOVERNOR OF BENGAL, AT THE ANNUAL MEETING OF THE ASIATIC SOCIETY OF BENGAL ON THE 4TH OF FEBRUARY, 1929.

GENTLEMEN,

I must first thank you for inviting me to preside over this gathering this evening. It was a source of much regret to me that I was unable to attend your meeting last year, owing to my being called to Delhi by His Excellency the Viceroy. I am, however, more fortunate this year, and it gives me much pleasure to have this opportunity of making personal acquaintance of the Asiatic Society of Bengal, rightly regarded as one of the foremost scientific institutions in India.

It is not my intention, and you will not expect me, to inflict upon you anything in the shape of a disquisition on those subjects of which my audience are masters. I should soon find myself out of my depth.

I have listened with much interest to the address which has just been delivered by the President, in which he has given an admirable historical survey of the Society's activities, which enables me to appreciate its importance and value. This history of your Society depicts the ramifications of its relations with eminent scholars and scientists of the learned societies of all nations of the world, and also records the activities of your members in every branch of intellectual endeavour.

It is a relief to leave behind for a few moments the mundane problems which daily confront one in my position and to feel myself in the elevating atmosphere which pervades this gathering. An object of your Society must be to encourage those who, acquiring exceptional knowledge by research, give their conclusions for the general benefit of mankind, and make them the common property of our teachers, who in their turn pass it on in simple phrase to students. It is desirable that your audience should be enlarged and this can come only through education. As you watch the progress of the world, you must be encouraged to work the harder and to think deeper in the hope of being able to assist by your vision and knowledge, and to guide and direct by instructive criticism or reasoned warning.

Judging by the names of your associates, your Society has obviously an attraction for those directly interested in educational effort, and it would not, perhaps, be unreasonable to believe that your support will be readily forthcoming for any

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practical effort to place our great educational establishments in Bengal upon a plane equal to that of any similar institutions in the world.

We meet under happy conditions as regards your Society. Your President is one whose research work, especially in connection with the scourge of Kala-Azar, has secured for him a prominent position amongst the medical profession. The results of his work have done much to alleviate the suffering caused by this distressing disease. Your membership has reached its highest level this year, and amongst the new members there are many names of men of high attainments.

A society of this character must be kept within limits, in view of your determination to include within your membership only those whose record of intellectual attainment makes them eligible. But its popularity is expressed by its number, this year the total being over 600. Throughout the year your activities have been well maintained and much valuable work has been performed. You record several successful general lectures and numerous papers on Philology, Biology and Anthropology. In all no less than 44 new papers were recorded. The issues in the Bibliotheca Indica have aggregated over 2,100 printed papers. In every branch of its work the Society receives appeals for scientific and literary information, and for direction in scholarship and general oriental study. By its correspondence the Society's store of knowledge can effectually be made available to students and scholars outside, and I can appreciate the wish which has been expressed that the Society should have the staff large enough to cope with its voluminous correspondence.

Your financial condition appears to be fairly satisfactory. Though the salaries of the office staff which is a recurring expenditure, must depend upon some substantial increase in the reserve fund, I note with pleasure donations to the permanent library endowment fund by Mrs. Brahmachari, Mr. W. K. Dods, Sir David Ezra, and Mr. Gour Charan Law.

There can be no more worthy object for the support of those who look forward to that synthesis of Western and Eastern thought to which your Society so splendidly contributes, than a bequest for its work. Such support is needed for increasing the means of spreading your knowledge, conserving your library treasures, and consolidating your permanent staff. In wishing the Society every prosperity, I commend its work to the consideration of the generously-minded public.

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OFFICERS AND MEMBERS OF COUNCIL ASIATIC SOCIETY OF BENGAL, 1929.

Elected and announced in the Annual Meeting, 4th February, 1929.

President.

Rai Upendra Nath Brahmachari, Bahadur, M.D., M.A., Ph.D., F.A.S.B.

Vice-Presidents.

W. A. K. Christie, Esq., B.Sc., Ph.D., M.Inst.M.M., F.A.S.B.
Sir R. N. Mookerjee, K.C.I.E., K.C.V.O.
Sir E. H. Pascoe, Kt., M.A., Sc.D., D.Sc., F.G.S., F.A.S.B.
Hon'ble Mr. Justice C. C. Ghose, Kt., Barrister-at-Law.

Secretaries and Treasurer.

General Secretary :—Johan van Manen, Esq., F.A.S.B.
Treasurer :—Baini Prashad, Esq., D.Sc., F.Z.S., F.R.S.E., F.A.S.B.
Philological Secretary :—Mahāmahopādhyāya Haraprasad Shāstrī, C.I.E., M.A., D.Litt., F.A.S.B.
Joint Philological Secretary :—Shams-ul-'Ulamā Mawlawī Hidāyat Hosain, Khan Bahadur, Ph.D., F.A.S.B.
Natural History Secretaries. { Biology :—Lt.-Col. R. B. S. Sewell, M.A., M.R.C.S., L.R.C.P., F.A.S.B., F.L.S., F.Z.S., I.M.S.
Physical Science :—C. V. Raman, Esq., M.A., D.Sc., F.R.S., F.A.S.B.
Anthropological Secretary :—Rev. P. O. Bodding, M.A., F.A.S.B.
Medical Secretary :—Lt.-Col. R. Knowles, B.A., M.R.C.S., L.R.C.P., F.A.S.B., I.M.S.
Library Secretary :—Lt.-Col. N. F. Barwell, M.C., M.A., Barrister-at-Law.

Other Members of Council.

Suniti Kumar Chatterji, Esq., M.A., D.Litt.
B. De, Esq., M.A., I.C.S. (retired).
H. E. Stapleton, Esq., M.A., B.Sc., I.E.S., F.A.S.B.
Hon'ble Mr. Justice B. B. Ghose, M.A., B.L.
Rev. A. Willifer Young.
Sir J. C. Coyajee, Kt., B.A., LL.B., I.E.S.

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EXHIBITION ANNUAL MEETING.

List of Exhibits shown after the Annual Meeting of the Asiatic Society of Bengal, on the 4th February, 1929.

1. A. F. M. Abdul Ali.

Miscellaneous Historical Documents.

(1) Copy of a letter from Mr. W. C. Malet, Resident at Poona, enclosing with his remarks copies of certain papers, giving a sketch of the Foreign and internal Commerce of the Mahrattas and discussing at length the prospects of increasing the commercial intercourse between the Mahratta Country and the Company's territories. (H. D. Public A. 22 Apr. 1789, No. 25.)

(2) Minute of the Governor-General, reporting the death of Sir William Jones, deploring his loss and suggesting that all materials left by him for the Digest of the Hindu and Muhammadan Laws may be asked for from his executors. (H. D. Public 2 May, 1794, No. 1.)

(3) Minute of the Governor-General on the subject of the covenants to be executed by the civil and military servants of the Company and in general by British subjects residing in India with the resolutions of the Board thereon. (H. D. Public 6 March, 1795, No. 4.)

(4) Minute of the Governor-General, agreeing to advance money to the proprietor of the Government House for effecting some addition and alterations in it, and enclosing a plan and an estimate. (H. D. Public 20 February, 1795, Nos. 5–6.)

(5) Advertisement notifying certain regulations in order to facilitate the transmission of the Company's bonds and promissory notes from one part of the country to another. (H. D. Public 20 February, 1795, No. 8.)

(6) Letter from Mr. J. Rennell, Surveyor General, recommending the addition of the Establishment for regulating the Accounts and Estimates of the Land and River survey establishment and expenses. (H. D. Public 11 October, 1768, No. 1 (b).) (Autograph.)

(7) Suppression of human sacrifice in some hill tracts of Orissa. (F. C. 3 January, 1851, Nos. 114–15, and F. C. 23 March, 1855, Nos. 114-15.)

(8) Abolition of the *Sati* rite in the dominion of the Raja of Nagpur. (P. C. 24 September, 1832, No. 43; P. C. 14 January, 1833, No. 45; P. C. 3 July, 1837, No. 39; P. C. 14 August, 1837; Nos. 52-53; P. C. 25 September, 1837, Nos. 104–106; P. C. 13 November, 1839, Nos. 6–8; and Poll. Despatch from Court of Directors No. 3, dated 30 January, 1839, para. 52.)

(9) Appa Sahib's proposal to raise a battalion of Sepoys after the European manner under British officers approved by the Governor-General. (P. C. 9 November, 1816, Nos. 31-32.)

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(10) Trade of the Native States in India with the United Kingdom of Great Britain placed on the same footing with certain exceptions as that of the British possessions in the East Indies. (F. C. 25 November, 1853, Nos. 30–41.)
(11) Minute of the Governor-General regarding the salaries of the officers and clerks of the Supreme Court of the Judicature. (H. D. Public O. C. 6 March, 1775, No. 3 (a).)
(12) Lord Auckland's minute regarding the improvement of cotton cultivation in India. (H. D. Revenue Cons. 15 August, 1839 Nos. 1–4.)
(13) Persian (illuminated) poem in praise of Lord Canning.
(14) Persian (illuminated) poem in praise of Queen Victoria.
(15) Copy of the Minute by the Hon'ble T. B. Macaulay on Native Education dated the 2nd February, 1835. (H. D. Public A. 7 March, 1835, No. 15.)

2. K. Biswas and V. Narayanaswami.

A few examples of abnormal flowers and fruits from Bengal.

Cases of monstrosity of flowers and fruits are not uncommon in this country. Teretological phenomena such as carpellody and prolifications of Hibiscus sp., Citrus sp., Roses and Bananas are often noticed. Here we have found a few instances, such as: lateral floral prolification of Calandula officinilio, Allium sativum; double fruits in Citrus decumana, Lagenaria vulgaris and Musa sapientum. Vivipary of the seeds of Zea Mays is also a rare occurrence.

3. U. N. Brahmachari.

Nine cases of Dermal Leishmanoid, first observed by Dr. Brahmachari in April 1922. Skin lesions due to Leishmania donovani.

4. M. L. Cleghorn.

Egyptian Clover or berseem (Trifolium Alexendrenum).

A green manure for mulberry. The plants exhibited were planted on the 30th October, 1928, and have grown without irrigation.

5. O. Cleghorn.

(1) *A simple and inexpensive portable Indian Hand Loom.*

This is very suitable for cottage workers.

(2) *Chinese Tea Caddy.*

About two hundred years old.

6. H. C. Das-Gupta.

Section of Eocene Limestone showing Lithothamnion.

A micro-section of a piece of limestone from Sakeswar (in the Salt Range, Punjab) shows the presence of *Lithothamnion* (a calcareous alga). The age of the rock is Eocene. Two species of *Lithothamnion* have been already recorded by the exhibitor from the nummulitic limestone beds of Cherra-Punji while the same genus has been described by Adye from the upper Tertiary rocks of Navanagar State.

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यह पुस्तक वितरित न की जाय
NOT TO BE ISSUED

7. K. N. DIKSHIT.

Recent archaeological finds from India.

(1) Fragment of terracotta tablet with impression in low relief of hunting scene; from Mahasthan, Dt. Bogra, Bengal; note deer in flight before archer mounted on four-horse chariot; early Indian style; from Mahasthan excavations, Dt. Bogra.
(2) Cowrie-shaped terracotta rattle; from Mahasthan excavations, Dt. Bogra.
(3) Tiny pottery vase, decorated with lotus-leaf ornamentation, from Mahasthan excavations, Dt. Bogra.
(4) Stone image representing Revanta, son of the Sun-god; mounted on horseback, accompanied by drummers, swordsmen, etc. as in hunting; 10th century A.D. From Chacharipasa, Dt. Bakargunj, Bengal.
(5) Two necklaces of ancient stone beads of different shapes and variegated colours, belonging to the Gupta and earlier periods, collected in the mound at Chunsa, near Salar, Dt. Murshidabad.

8. O. C. GANGOLY.

(1) *An Illustrated Buddhist Manuscript.*

An Illustrated Buddhist Manuscript of an Avadāna, (*Vasundharā-kalpa suchandra-Avadāna*) with a collophon dated Samvat 101, written at Katmandu, Nepal, by Vajrācharya Ratna-mūrti.

(2) *A Tibetan Sin-destroyer.*

The sins of the devotee are transferred by the Lama to the grains which are placed inside the burner. These grains are burnt up on charcoal. The smoke—together with the sins—escapes through the mouth, and the devotee emerges purified and cleansed.

9. N. GANGULY.

Two early Bengali prints.

(1) The Holy Bible, published for the first time in the Bengali language in 1802 by the Mission Press at Serampur, Bengal. Two volumes.
(2) The Ramayana by Kirtbash printed for the first time in Bengali in 1802 by the Mission Press at Serampur, Bengal. Five volumes.

10. THE GENERAL SECRETARY.

(1) *The Society's publications of* 1928.

(*a*) Bibliotheca Indica.
(*b*) Catalogues.
(*c*) Journal.
(*d*) Memoirs.
(*e*) Indian Science Congress.

सन्दर्भ ग्रन्थ
REFRENCE BOOK

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(2) *Some acquisitions of interest to the Library during* 1928.

(*a*) Presentations.
(*b*) Purchases.

(3) *Some recent publications by Members of the Society.*

M. Hürlimann: Picturesque India. Bombay, 1928.
U. N. Brahmachari: A Treatise on Kala-Azar. London, 1928.
R. N. Chopra: Anthelmintics and their uses. Baltimore, 1928.
G. Rœrich: Tibetan Paintings. Paris, 1925.

(4) *A monstrous fake.*

A good example of the night-mare art of the professional Calcutta art-forger of to-day. A warning to the unwary.

(5) *Abhidhan-Rajendra. A Grand Jain Encyclopaedia of the Svetambara Jains. By Sri Vijaya Rajendra Suri.*

This Jain encyclopaedia in seven volumes was printed in the village of Ratlam in Malwa a little place inhabitated by above 36,000 souls. It has required 15 years to complete the printing after the long preliminaries of the preparation, a fine example of unpretentious but most valuable labour still being performed in out-of-the way little centres of learning in India.

11. The Geological Survey of India.

(1) Apparatus for the investigation of opaque minerals in polarised light reflected from their polished surfaces. The specimen under the microscope shows well-crystallised hollandite.

(2) Stone meteorites which fell at Naoki, Parbhani District, Hyderabad, about 5 P.M. on the 29th September, 1928. One fine specimen weighs 4920.7 grammes; the other weighs 1,762.55 grammes. A large proportion of the smaller stone has been broken off, chiefly, it is presumed, by human agency. A "secondary crust," however, can be seen, which was found in the last stage of the stone's journey towards the earth, thus indicating the stone had also been disrupted before reaching the earth's surface. Both stones were presented to the Geological Survey of India by G. H. H. Mills, Esq.

(3) Allophane (a hydrated aluminium silicate) from Tikak, Assam. Nothing similar has previously been found in India.

(4) Atacamite (copper oxychloride) from Palamau, Bihar. The only other Indian locality for this mineral is in Madras.

(5) Barakar coal from the Victoria Colliery, near Kulti, Raniganj Coalfield, showing in one specimen the four constituents of coal, *viz.*, (1) Mineral Charcoal or Fusain; (2) Dull Coal or Durain; (3) Bright Coal or Clarain; (4) Jet Bright Coal or Vitrain. The specimen, collected by Dr. C. S. Fox, is probably the only one known which shows all four constituents.

(6) Barakar coal from the Victoria Colliery, near Kulti, Raniganj Coalfield, showing "ball" structure. No satisfac-

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tory explanation of the origin of this structure has yet been given.

(7) Specimens showing the evolution of elephant teeth. The form-stages in the evolution of elephant teeth have been known for about eighty years. Most of the specimens on which this knowledge is founded were collected by Colonel Sir Proby T. Cautley and Dr. Hugh Falconer who described several in the Asiatic Society's publications. They found them in the upper Tertiary strata of the Siwalik Hills and presented them to the British Museum in 1842. Officers of the Geological Survey have recently collected more material in Baluchistan, in Burma, in the Salt Range and in Sind, including many species hitherto unknown. As far as possible the exhibited series utilises these new forms to demonstrate the evolutionary stages.

The new discoveries are labelled "New Species." They are preserved in the Indian Museum and will shortly be described by Mr. A. T. Hopwood.

12. The Joint Philological Secretary.

Some interesting recent acquisitions to the Arabic and Persian MS. collections, purchased in Persia by Mr. Ivanow during 1928.

(1) *Tadhkira-i-Dilgusha.*

An account of the contemporary poets of Shīrāz by 'Alī Akbar Shīrāzī. The last date mentioned in this work is A.H. 1240. Two copies, the original draft and the fair copy.

(2) *Dhakhīra-i-Khawārizm Shāhī.*

An encyclopaedia of Medical Science by Ismā'īl bin Ḥusain al Jurjānī, died A.H. 531. The first part is dated A.H. 673 and the second part A.H. 730.

(3) *The first volume of the Canon of Avicenna, (died A.H.* 428).

A famous work on medicine. Not dated, c. 6th century Hijra.

(4) *Tafsīr-ul-Qur'ān.*

A commentary on the Qur'ān in the Persian language, defective at the beginning and end. Not dated, c. 7th century Hijra.

(5) *Kitāb-ul-Farā'iḍ.*

A treatise on the Sunni law of inheritance. Not dated, c. 7th century Hijra.

(6) *Rawḍat-us-Safaviya.*

A history of the Safavī dynasty from its origin to the beginning of the reign of Shāh Ṣafī by Mīrzā beg bin Ḥasan Ḥasanī. Composed in A.H. 1038.

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13. ALFONS KETS.

A Flemish Artist, born in Antwerp. Lived for many years in China where he was for a long time Professor of the Fine Arts class of the Peking Government University. Painted the portraits of many prominent political and military men in China, including several Presidents: Yuan Shi Kai, Shu Sze Tchang, etc.; military leaders: Pei Fu, Shu Sze Yuan, etc.; political leaders: Tsai Yen Pei, acting Minister of Justice of the Nanking Government. Painted in Siam the portrait of the uncle of the present King, Prince Damrong, brother of the late King Chulalongkorn.

Studied at the Royal Institute of Fine Arts of Antwerp and of the École des Beaux Arts of Paris.

Portrait in oils of His Grace the Archbishop of Calcutta, Monsigneur Dr. F. Perier, S.J.

14. SATYA CHURAN LAW.

Two rare bird migrants to Calcutta.

(1) Iynxtorquilla Japonica (Bonap). The Japanese Wryneck.
Since Blyth (1841-43) and Tytler (1854) first found it in the vicinity of Calcutta there has been no other mention of its occurrence in this district within half a century. I find it extremely rare, this being the first instance when I have come across this bird near Calcutta.
Shot 25-12-28 while foraging for food on the grassy ground beside railway fencing.

(2) Turdus unicolor Tichell. Tickell's Thrush.
Tytler obtained it near Barrackpur and since then there has been no record of its occurrence in this district.
Shot on 27-12-28.

15. M. J. SETH.

A miscellaneous collection of Armenian editions, Manuscripts and Indian coins, and other items.

(1) A Manuscript "Life of Christ," in classical Armenian, illustrated with coloured steel engravings, written at Julfa,—a suburb of Ispahan (Persia)—in 1707 A.D., by the Reverend Father Jacob Villotte, S.J., a French Jesuit and a renowned Armenian Scholar, with a Life of the author in English, by Mesrovb J. Seth, M.R.A.S., Calcutta.

(2) A Latin-Armenian Dictionary by the Reverend Father Jacob Villotte, S.J., a French Jesuit Missionary in Armenia and Persia for 25 years towards the end of the XVII century. Printed at Rome in 1714.

(3) A Latin translation of the "History of Armenia" by Moses Chorenensis, the father of Armenian historians, printed at London with the Armenian text in 1736. This is the *first* Armenian book printed in England.

(4) A book of historical miscellanies and exhortations printed at Madras in 1772. This is the *first* Armenian book printed in India.

(5) The complete numbers of the *first* Armenian Journal "AZDARAR" (Intelligencer), printed and published at Madras from 1794–1796. This is the *first* Armenian newspaper in the world. It was edited, printed and published by the Reverend Arratoon Shumavon of Shiraz,

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who was the vicar of the Armenian Church of Madras from 1784–1824. There is at page 254 a facsimile copy of the Farman, in Persian, of the Nawab Walajah of the Carnatic granting permission to the editor of the "Azdarar" to publish books in Persian and Arabic at his press, in addition to Armenian. This is one of the three copies extant in the Armenian world.

(6) An illustrated Armenian Bible, printed at Venice by the Mekhitharist Society in 1733.

(7) A manuscript Ritual of the Armenian Church with hand-painted illustrations, written at Julfa—a suburb of Ispahan (Persia)—in the 17th century.

(8) A facsimile of the Armenian inscription on the *oldest* Christian tombstone in Calcutta, dated, according to the Armenian era of Azarea, the 11th July, 1630 A.D. This valuable landmark of the early history of Calcutta was discovered in the Armenian churchyard of Calcutta in 1894 by Mr. Mesrovb J. Seth, M.R.A.S., author of the "History of the Armenians in India."

(9) The Life and works of the Armenian Catholicos (pontiff) Abraham who was a personal friend of Nadir Shah whose sword he blessed when that great warrior assumed the Sovereignty of Persia. This is the *first* Armenian book printed in Calcutta, in 1796, by the Rev. Joseph Stephen, Vicar of the Armenian Church of Nazareth, Calcutta.

(10) A Map of Ancient Armenia, engraved at Venice in 1751.

(11) A Life size portrait of the Emperor Jehangir with two of his favourite queens—Aram Jan Begum and Hiyat-ul-nisa Begum—drinking wine, with an appropriate couplet from Hafiz at the top. A perfect specimen of Mogul art.

(12) Ten Armenian coins of the Rubenian dynasty that ruled in Armenia from 1080–1375 A.D. with Armenian legends.

(13) A complete set of Parthian Silver coins of the Arsacidæ who ruled in Parthia from 255 B.C. to 216 A.D. A most interesting collection.

(14) A "tetradrachm" of Alexander the Great who reigned from 336–324 B.C. A beautiful specimen.

(15) A gold "Stater" of Alexander the Great.

(16) A square Mohur of Akbar the Great.

(17) A round Mohur of Akbar the Great.

(18) A "Zodiacal" Mohur of Jehangir.

(19) A "Zodiacal" Rupee of Jehangir.

(20) A copper coin of Ardeshir Babekan, the Founder of the Sassanian dynasty that ruled in Persia from 226–651 A.D.

(21) A Manuscript Koran, beautifully illuminated throughout. A perfect specimen of Arabic and Persian caligraphy, written in the year 1231 A.H. by Mirza Hossain, in Persia, with marginal notes in Persian.

(22) An old carved ivory figure of the Emperor Hamayun, father of Akbar the Great.

16. V. V. Sohoni.

(1) *Weather sequence during the passage of a cyclone over Calcutta.*

The diagram illustrates the pressure, wind, rain and temperature at Calcutta during the passage of a cyclone in September 1916.

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The pressure fall and the sudden lull in the wind when the centre was over Calcutta, are noteworthy, as well as the reversal of wind direction after the passage of the centre. The original record of an anemograph shows the fluctuations in wind velocity.

(2) *Nor'-Westers in Bengal.*

These sudden storms are, it is believed, generated along "discontinuities" in the atmosphere. Specimen charts of a day on which conditions were favourable for the occurrence of nor'-westers are given. On this day a severe nor'-wester passed over Calcutta. Wind and temperature records of autographic instruments at Alipore are shown. These bring out the peculiar features of these storms, *viz.*, the sudden shift of wind to a northwesterly direction with the onset of the squall, and a sharp fall in temperature.

In connection with the study of nor'-wester formation, the Alipore Observatory has undertaken a two years' programme of special observations in Bengal, 3 times a day, at some 20 observatories and at about 60 other places, where schoolmasters act as auxiliary observers.

17. Johan van Manen.

A Tibetan House Altar.

This is a good example of modern Tibetan decorative woodcarving. The altar, or shrine, is called *chos-bshams* in Tibetan. It is built to contain religious images. The sample exhibited contains niches for seven images of varying sizes. The ornamentation is made up of the conventional Tibetan patterns, flowery scrolls, dragons, the eight lucky signs, the "Chinese fence" (*rgya-nag lchags-ri*). The whole is gilt and lacquered. The shrine should stand on a table leaving place for a row of offering bowls in front.

18. The Zoological Survey of India.

(1) *Indostomus paradoxus Gen. et Sp. Nov.*

A new form of freshwater fishes allied to pipe—fishes occurring in an inland freshwater lake in upper Burma. It is a relict form which indicates direct connections of the lake with the sea in the past geological ages.

(2) *Curious shelters of the younger Stages of some moths.*

The caterpillars of the family Psychidæ (Bag-worm moths) live in cases made of silk overlaid with small twigs, grass stems, dry leaves, etc., depending on the nature of the foodplant. The larval cases exhibit great variety of shape, each species having the case of a characteristic form. The caterpillars carry their cases along with them as they move about their foodplants. Pupation takes place within the larval case. Whereas the male is a swift flying insect when adult, the female never acquires wings and passes her whole life inside the case.

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ANNUAL REPORT FOR 1928.

The Council of the Asiatic Society of Bengal has the honour to submit the following report on the state of the Society's affairs during the year ending the 31st December, 1928.

Ordinary Members.

Totals. The calculated total of Ordinary Members on the roll of the Society at the close of 1928 was 622 as against 574 at the close of 1927, a net increase of 48 during the year, more than double that of the year before. For the first time in its history the Society's closing total for the year surpasses the 600. This gratifying result has exceeded expectations and we will watch with interest whether our 'saturation point' will prove to be below or above the next hundred.

Gains and losses. These were as follows during the year :—

Gains.		*Losses.*	
Old elections carried forward	8	Applications withdrawn ..	3
New elections	123	Elections lapsed	9
Resignations withdrawn ..	2	Elections carried forward ..	3
		Deaths	5
		Resignations	42
		Rule 38	18
		Rule 40	5
Total	133	Total	85

Initial total 574 ; net gain 48 ; final total 622.

General. With the year's gain the Society has maintained itself for the fifth year in succession on the positive side of expansion. The annual loss in membership amounted to about 14% of our total membership a fairly high proportion of wear and tear. Losses from all other sources were normal, but the resignations were higher than in any year before.

It is a remarkable fact to note that amongst the resignations only 8 were those of old members of the Society. Of the remaining, 6 members joined in 1924; 6 in 1925; 16 in 1926; 4 in 1927 and 2 during the very year of their resignation, 1928. This would seem to indicate that of late years admission has often been sought, and perhaps invited, somewhat lightheartedly. It also shows that the older body of members is one of considerable stability.

It is good to open the doors of our institution as wide as possible for the reception of new members but admission to the Society must be maintained a matter of responsibility and dignity.

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Rule 38 was strictly applied during the year which gave greater reality to the entries and totals in our registers.

A detailed cross-check of our membership lists was again made at the end of the year and gave results which tallied.

Non-resident Members. The number of non-resident members has been steadily growing again for the last few years, but there is still room for expansion under this heading, as our previous maximum number of non-resident members, at the end of 1912, was no less than 62 higher than at the end of 1928, namely 229 then as against 167 now.

Life-members. A very gratifying point to note is the large accession to the number of life-members during the year. No less than 15 members (6 new and 9 old ones) compounded for life-membership. Their total now stands at 46 which is double the number of their average total during the last 30 years.

Deaths. Amongst the Ordinary Members lost by death during the year were some old and especially valued members, whose memory will be cherished in the annals of the Society and for whose departure it is the poorer.

Amongst them were :—

B. Smith Lyman (Life and senior member of the Society, 1870).
Dewan Tek Chand (1901).
Mr. Justice Gyanendranath Ray (1926).
Maharaja Bhanj Deo of Mayurbhunj (Life-member, 1928).

Associate Members.

During 1928 no new Associate Members were elected.

One Associate Member was lost by death during the year :—

E. Brunetti (1915).

There were no other losses.

The present number stands at 12; statutory maximum 15.

Special Honorary Centenary Members.

Of our two Special Honorary Centenary Members one was lost by death to the Society's very deep regret :—

Émile Sénart (1884).

Only one remains to us.

Ordinary Fellows.

At the Annual Meeting held on the 6th February, 1928, the following Members were elected Ordinary Fellows :—

H. E. Stapleton.
Dr. Baini Prashad.
Lt.-Col. Sir Richard Carnac Temple.
Charles A. Bentley.

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No Ordinary Fellows were lost by death.
Two Fellows were lost by resignation :—

Lt.-Col. E. D. W. Greig (1915).
S. Khuda Buksh (1923).

At the end of 1928 the number of Ordinary Fellows was 40; statutory maximum 50.

Honorary Fellows.

During the year no scholars were newly elected Honorary Fellows, and none were lost by death or resignation.
Their number at the end of 1928 was 28; statutory maximum 30.

Obituary.

During the year the Society received, to its great regret, news of the death of its following distinguished old relations :—

Dr. Karl Diener (Recipient Barclay Memorial Medal, 1911).
The Rt. Hon. Ameer Ali (An Ordinary Member, 1874–1907).
Lt.-Col. C. E. Luard (An Ordinary Member, 1906–1925).

Condolences.

The Council expressed its condolences to the relatives of the following distinguished personalities deceased during the year :—

Lord Sinha of Raipur.
The Rt. Hon. Ameer Ali.
H.H. the Maharaja of Mayurbhanj.
Mr. Justice G. N. Roy.

Council.

The Council met 11 times during the year. The attendance averaged 10 of the 20 component members.
The following resolutions of thanks were passed by the Council :—

To Dr. W. A. K. Christie, very cordial thanks for the way in which he has served the true interests of the Society during the period of his Presidency.

To Dr. Baini Prashad for the generous presentation to the Society's library of editions of Goethe and Schiller.

To Dr. U. N. Brahmachari, for his additional contribution to the Sir William Jones Medal Fund, and for the presentation to the Society's library of his valuable standard work on Kala-Azar.

To Sir B. L. Mitter for his repeated and valuable legal advice on matters concerning the Society.

To Mrs. Brahmachari for a generous donation of Rs. 600 to the Library Endowment Fund of the Society.

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Office Bearers.

The changes on and absences and resignations from the Council during the year were as follows :–

Mr. J. H. Lindsay resigned in July on account of leaving India.

Dr. W. A. K. Christie resigned, on account of absence from India, from June.

Col. R. Knowles resigned, on account of absence from India, from June.

Sir E. H. Pascoe was absent from India from June to December.

Sir C. C. Ghose was absent from Calcutta for two months towards the close of the year.

Mr. B. De was absent from Calcutta during October.

Sir B. L. Mitter was absent from Calcutta from December.

Col. Barwell was absent from Calcutta during October and November, the General Secretary officiating for him as Library Secretary.

Dr. Baini Prashad was absent from Calcutta from the 2nd to the 13th August; from the 12th to the 26th October and from 6th November to the 12th of December, the General Secretary officiating for him as Treasurer.

Committees of Council.

The standing Committees of Council during the year were the Finance, Publication, and Library Committees, which met monthly.

Special Committees were appointed *ad hoc* during the year and met to consider and advise on various problems as follows :–

A Committee to advise on the price and the standard number of pages for the annual volume of the Society's *Journal*. The Committee submitted its recommendations which were accepted.

A Committee to draw up a memorandum to the Government of Bengal on behalf of the Society concerning two Calcutta University Bills introduced in the Bengal Legislative Council. A memorandum was submitted, approved by Council, and forwarded to the Government.

Finance Committee.

The Finance Committee continued during the year to meet separately on dates different from those of the Council Meetings.

A special meeting in December, for consideration of the next year's budget, was instituted.

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Office.

General Secretary. The General Secretary was in office during 364 days of the year and continued to perform the amalgamated duties of General Secretary and Assistant Secretary.

Staff. Changes in the office staff took place as follows :—

K. Subramoni Iyer, cataloguer, left on the 29th February. His work has been provisionally placed in the hands of S. K. Roy, general assistant, as extra work out of office hours.

R. Ramalinga Iyer, file clerk, left on the 30th July, and was provisionally replaced by H. B. Banerjee.

G. Mathai was newly engaged, mainly to deal with old files.

Pandit Sasadhar Banerji, in charge of the Sanskrit Manuscripts, took long leave for reasons of health on the 14th of May and was provisionally replaced by D. K. Samaddar.

Attendance and spirit were generally satisfactory but the staff continues to present many problems which are far from being solved. A heavy ballast of unassimilated past history and activity continues to weigh on the office. The annual Puja and Christmas holidays, occurring at seasons of great pressure of work on the office, continue to cause some friction and difficulty.

Subordinate staff. In the subordinate staff the usual minor changes took place, which do not call for comment.

Correspondence. This branch of activity continues to be most exacting. The year brought a record with 3,660 outgoing letters as against 2,500 the year before, a total never previously surpassed. The number of incoming letters was 3,666 as against 2,700 in 1927. It is interesting to note how closely the numbers of incoming and outgoing letters balance. The life of the Society flows to a great extent in its correspondence, which is much more than mere routine work. It is quite evident from the experience of the last six years that the demands from members, business and official relations, and the public in general, force us to acknowledge that correspondence is an essential activity of the Society. No satisfactory condition will be arrived at in this respect before the Society can rise to the appointment of a capable correspondence clerk and of a stenographer, an ideal to which the present finances of the Society do not allow us to aspire as yet.

Though the number of outgoing letters has been higher than in any year before, there has been a demand for replies to many enquiries which it was not possible to meet adequately. More and more the Society is being looked upon as a body to appeal to for scientific or literary information, or for the performance of good offices in scholarly interest. The supply and performance of all this is a matter requiring leisure, and

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leisure is unknown to the office. It is precisely the few hundreds of insufficiently answered letters of this nature which come most directly within the sphere of our natural activities as a body. It is to be hoped that some time the Society may be able to organise a special department of scholarly information and intellectual co-operation.

Council Circulars. About 200 Council and Committee Circulars were issued during the year.

Files. An appreciable amount of work was done in connection with our files. 50 bundles of miscellaneous old papers have been sorted, grouped and filed. Another hundred bundles of such old papers have still to be dealt with in a similar manner. After these have been properly arranged, the whole material has to be indexed. A great handicap to a proper arrangement of our correspondence is the absence of a proper file installation and the lack of a special room for our archives. From the sub-heading *Staff* in this and in the previous reports it will be seen that the office had been singularly unlucky with its file clerks. We have hitherto not been able to find the right man for the work. The successive incumbents of the post have rarely stayed as long as a year without resigning. The result has meant considerable loss of office time in searching for needed documents. An old Society like ours should have easy and immediate access to its documents which are constantly called for, and it is imperative that the Society's file system should be thoroughly remodelled. But even then the proper working of such a system requires a capable and intelligent man.

Stock-room. The new works completed during the year in the *Bibliotheca Indica* and the completed volumes of our Journals were bundled and labelled. The stock-book was carried on and new stock-registers were set up for Reprints from our Journals, for the Numismatic Supplement, and for the Proceedings of the Indian Science Congress. A similar stock-register has still to be opened for our several miscellaneous publications.

Distribution. No change was made in the system of distribution of our notices and of the issue of our Journals and other publications. The distribution of the *Bibliotheca Indica* on the presentation list is still in need of some closer attention and has not yet been brought entirely up-to-date.

Addresses. For notices and publications printed addresses remained in use, or if these had been changed type-written addresses, all of which were checked before issue. As a result complaints of non-delivery or mis-delivery have become rare.

Card Register. The membership of the Society is recorded on a card register which is kept up from day to day, and subjected to a complete cross-check at the end of the year. This system has proved invaluable for securing reliability of our

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membership totals. During the year a similar register was set up for the Indian Science Congress membership.

It is hoped gradually to extend the same system to exchanges, free distributions, and files.

Stationery. Purchase and issue-registers for stationery were introduced and the stock remained segregated in special almirahs with one clerk of the staff in charge of issue and registration.

Circulars and forms. About 45 forms, notices, and cards were printed during the year and a general register for these items was kept up.

Office furniture. During the year a new presidential platform and two tables were acquired. Some minor items of furniture were purchased. A special case was built for the Ica Famulus Camera.

Office Manual. An office manual as described in the report for 1924 remains an important desideratum.

General. Our accounts show that the salaries of our office staff represent our largest item of recurrent expenditure. With our available income it is impossible to contemplate any increase of expenditure under this head. Nevertheless, such increase is urgently called for, though the matter cannot be thought of without substantial additions to our permanent reserve fund. Yet, it has not to be lost sight of that the Society has at present not at its disposal the services of an Assistant Secretary; of a Stenographer; of a Correspondence Clerk; of a Conservator of Manuscripts; of a technically qualified Cataloguer; of a business Manager for the sale of its publications; of a Scholar in charge of the Sanskrit library and of the Islamic library, and of a Care-taker.

Rules and Regulations.

A very important measure was taken during the year by framing and adopting Regulations providing for the admission of scientific and educational Institutions, and of public and official Bodies as Institutional Members.

Furthermore, certain minor modifications were introduced in the Regulations regarding the award of the various Medals bestowed by the Society, and in those regarding the Election of Ordinary Fellows.

Our Rule Book has become exhausted once more and must be reprinted in the course of next year.

Indian Science Congress.

The fifteenth annual meeting of the Indian Science Congress was held in Calcutta, from January 2nd to January 7th, 1928, under the patronage of His Excellency the Viceroy and His Excellency Colonel the Right Hon'ble Sir Francis Stanley

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Jackson, Governor of Bengal. Dr. J. L. Simonsen was President. The *Proceedings* of the Congress were published late in December, a publication of 446 pages. During the latter months of the year, the usual administrative work for the Congress in connection with the next Session (Sixteenth Congress), to be held in Madras, was performed by the Society's office. The flourishing state of the Congress entailed considerable labour, and as usual the rush at the end of the year was exceedingly great; this year almost reaching breaking point.

As in the year before, the abstracts were sent as far as practicable by post to all members who had applied for membership before the date of their publication. This year that date was as late as the 19th December, leaving again a barely sufficient margin of time to reach distant members before their departure for Madras. Lateness of enrolment was a feature of this year. The last applications were received on the 31st of December.

The Congress finances remained separated from those of the Society. The Society contributed a grant of Rs. 250 towards the Congress funds in aid of the publication of the *Proceedings*.

The General Secretaries to the Congress continued to be, as in the year before, Prof. S. P. Agharkar and Dr. R. V. Norris.

The general administration of the Congress, when not in session, continued, as hitherto, to be attended to by the office of the Society.

The Council issued a reprint of the *Proceedings* of the First Congress, which had been out of print for a long time, and presented it as a souvenir to the members of the Fifteenth Congress; and decided to reprint similarly the *Proceedings* of the Second Congress for presentation as a souvenir to the members of the Sixteenth Congress.

Indian Museum.

The Society's representative on the Board of Trustees of the Indian Museum, under the Indian Museum Act, X, of 1910, remained the same, MM. Haraprasad Shastri.

Kamala Lectureship.

The Council's nominee to serve on the Election Committee of the Kamala Lectureship, administered by the Calcutta University, remained the same, MM. Haraprasad Shastri.

Deputations.

The Society received invitations to send representatives to the following functions of public bodies:—

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1. Seventeenth International Congress of Orientalists, Oxford, August.
2. 150th Anniversary of the Royal Batavian Society of Arts and Letters, Batavia, April.
3. Smithsonian Institution, Commemoration Meeting for Charles Doolittle Walcott, Washington, January.
4. Fifth All-India Oriental Conference, Lahore, November.
5. Naturalistic Society of Tartu, Esthonia, September.
6. Folk-Lore Society Congress, London, September.
7. Fifth International Botanical Congress, Cambridge, 1930.
8. Centenary Celebration Société Linnéenne de Bordeaux, June and July.

For the first meeting the following Fellows and Honorary Fellows were invited to represent the Society :—Col. Phillot, Sir Denison Ross, Sir Wolseley Haig, Prof. J. Ph. Vogel and Sir George Grierson.

For the second meeting no personal representation could be arranged and a congratulatory telegram was sent on the opening day of the celebrations.

For the fourth meeting the Society's Philological Secretary and Fellow, MM. Haraprasad Shastri, who presided over the Conference, was invited to represent the Society.

For the seventh meeting arrangements were deferred till 1930.

For the other meetings congratulatory letters were sent on behalf of the Society.

No reports from our representatives to any of the above meetings have as yet been received.

Congratulations.

The Society sent its very cordial congratulations by cable and by letter to Sir George A. Grierson, its Honorary Fellow and one of its oldest and closest relations, at the occasion of the bestowal on him of the high distinction of the *Order of Merit*. Valued replies by cable and letter were received in return.

The Society also sent its congratulations to three of its Members at the occasion of their receiving the distinction of Knighthood, as follows, to :—

Sir Brojendra Lal Mitter (Council Member).
Sir Edwin H. Pascoe (Vice-President).
Sir Jehangir C. Coyajee (Ordinary Member).

Visits.

An appreciable number of distinguished visitors came to the Society during the year. Amongst them were scholars from Nepal, Austria, Germany, Japan, India, France, China, England and America ; amongst whom were well-known anthropologists, sanskritists, medical men, explorers, physicists, and officials

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Social Functions.

No social functions were held by the Society during the year.

Elliott Prize for Scientific Research.

The prize offered for the year was for research in Mathematics. Three candidates submitted papers. The Trustees recommended that none of the essays submitted were of sufficient merit to be awarded the prize. The prize for next year (1929) will be for *Chemistry*.

Barclay Memorial Medal.

The (biennial) award of the Barclay Memorial Medal for 1927 was announced in the Annual Meeting of 1928. The medal was bestowed on Dr. Stanley W. Kemp. The Director of the Zoological Survey of India, Col. R. B. S. Sewell, received the medal on behalf of Dr. Kemp.

The next award will be made in 1930.

Sir William Jones Memorial Medal.

The first award of the medal (for 1927) was made to Sir Malcolm Watson in the Annual Meeting of 1928. The Surgeon-General of Bengal, Major-General Godfrey Tate, received the medal on behalf of Sir Malcolm Watson.

The second award will be made in the Annual Meeting of 1929.

During the year certain modifications were made in the Regulations governing the award, the most important being one making the award biennial instead of annual.

The next award will be made in 1931.

Annandale Memorial Medal.

The first, triennial, award of this medal for Anthropological work in Asia was made in the Annual Meeting of 1928 to Dr. Fritz Sarasin, and Mr. Max Staub, Consul for Switzerland, received the medal on behalf of Dr. Sarasin.

The next award will be made in 1931.

Other Medals and Prizes.

During the year three offers were made to the Society for the institution of new Memorial Medals and Prizes.

They were :—

1. A Paul Brühl Memorial Medal, offered by the Paul Brühl Farewell Committee.

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2. A Calcutta Science Congress Prize, offered by the Local, Calcutta, Committee of the 15th Indian Scince Congress.
3. A Prize for Zoological Research, offered by Dr. S. C. Law.

These various offers are under consideration by the Council and details will be fixed during the current year.

Society's Premises and Property.

No remarks are called for under this heading with regard to 1928, except that no opportunity was found to undertake annual repairs under the heading upkeep, for which an amount of Rs. 2,000 had been made available in the year's budget. Measures have to be devised leading to the performance of the necessary work as part of the regular routine of the year's administration.

The various desiderata and problems existing under the heading Premises and Property have been mentioned in the annual reports of the last few years and have to be kept in mind permanently until realisation.

Accommodation.

The old problems to be carried over as still needing attention remain: the provision of a set of small work-rooms for various uses, foremost of all for the archives and the editorial work of the Society, and better shelving in the stock-rooms.

Artistic and Historical Possessions.

During the year Domenichini's large painting fell down from the wall and was badly damaged. It was repaired, very successfully, and advantage was taken of the occasion to clean and re-varnish the canvas.

No other paintings were cleaned or re-varnished during the year.

We have still to complete our set of photographs and photographic negatives of our paintings, and to prepare similar sets of our busts.

Mr. I. B. Sen presented the Society with four ancient small metal images from the Rangpur district, of which one is inscribed.

Mr. Jogendra Nath Biswas presented the Society with autograph photos of three former Viceroys of India and of the Earl of Cromer.

Presentations, Donations, and Legacies.

In addition to the items mentioned under the previous heading or to be mentioned under the heading 'Library,' the following donations were made to the Society during the year.

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Dr. Brahmachari made a supplementary donation to the Sir William Jones Memorial Medal Fund, and Mrs. Brahmachari donated a sum of Rs. 600 to the permanent Library Endowment Fund.

Library.

The *Permanent Library Endowment Fund* benefitted by a donation of Rs. 600 generously given by Mrs. Brahmachari, and enabled us to increase its investments during the year to Rs. 8,000, face value, Government $3\frac{1}{2}\%$ securities.

After the end of the year Mr. W. K. Dods made a further donation of Rs. 1,000 to the Fund, which is to be invested during the current year, a gift here gratefully recorded in advance.

Similarly, Mr. Gour Churn Law and Sir David Ezra each donated Rs. 500 to the Fund after the close of the year. What makes these contributions all the more valuable is the circumstance that one comes from a non-member and the other from a Life-Member.

It is the intention to let the investments grow to Rs. 20,000 before income will be utilised for annual expenditure.

Accessions. The accessions to the Library during the year, exclusive of about 200 periodicals received in exchange or otherwise, numbered 444 volumes, out of which 327 were acquired by presentation and 117 by purchase. The more important items of presentations and purchases are given below in two lists.

The grant for book purchases for the year was Rs. 2,000. The expenditure under this head was Rs. 1,792-14-4.

Presentations of Interest.

(1) R. Knowles. An Introduction to Medical Protozoology Calcutta, 1928.
(2) J. Kunst. Hindoe-Javaansche Muziek-Instrumenten. Weltevreden, 1927.
(3) Bijan Raj Chatterjee. Indian Cultural Influence in Cambodia. Calcutta, 1928.
(4) G. R. Kaye. The Bakhshali Manuscript. Calcutta, 1927.
(5) H. Cousens. Chalukyan Architecture. Calcutta, 1926.
(6) U. N. Brahmachari. A Treatise on Kala-Azar. London, 1928.
(7) Leyden, Kern Institute. Annual Bibliography of Indian Archæology. Leyden, 1926.
(8) L. D. Barnett. A supplementary Catalogue of the Sanskrit, Pali, and Prakrit Books in the Library of the British Museum, acquired during 1906-20. London, 1928.
(9) G. Roerich. Tibetan Paintings. Paris, 1925.
(10) Sir J. Woodroffe. The Garland of Letters. Madras, London, 1922.
(11) Sir J. Woodroffe. Shakti and Shakta. 2nd Ed. Madras, London, 1920.

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(12) Adyar Library. Catalogue of Sanskrit Manuscripts, 2 parts, Adyar, Madras, 1921.
(13) J. W. Hauer. Der Vratya. Stuttgart, 1927.
(14) J. W. Hauer. Die Religionen. Berlin, Stuttgart, Leipzig, 1923.
(15) J. W. Hauer. Werden und Wesen der Anthroposophie. Stuttgart, 1923.
(16) V. Trenckner. The Milindapañho. London, 1928.
(17) Nyāyakośa. Poona, 1928.
(18) F. Sarasin. Anthropologie der New-Caledonier und Loyalty-Insulaner. With plates. Berlin, 1916–22.
(19) Bengal and Madras Papers, 1670–1785. 3 Vols. [Calcutta, 1928.
(20) Upanishads, text edition.
Saṃnyāsa-upanishad. Adyar, 1912.
Śaiva-upanishads. Adyar, 1925.
Vaishnava-upanishads. Adyar, 1923.
Sāmānya Vedānta upanishads. Adyar, 1921.
Yoga upanishads. Adyar, 1920.

Purchases of Interest.

(1) J. Baikie. The Glamour of Near East Excavation. London, 1927.
(2) C. J. Sawyer and F. J. H. Darton. English Books, 1475–1900. 2 Vols. Westminster, 1927.
(3) V. Goloubew. Documents pour servir a l'étude d'Ajanta. Paris, Bruxelles, 1927.
(4) Trial of Maharajah Nundocomar, Bahadur. London, 1776.
(5) Earl of Ronaldshay. The Life of Lord Curzon, 3 Vols. London, 1928.
(6) W. J. Morden. Across Asia's Snows and Deserts. New York, London, 1927.
(7) M. Summers. Malleus Maleficarum. [London.] 1928.
(8) Radha Kumud Mookerji. Asoka. London, 1928.
(9) M. Hürlimann. Picturesque India. Bombay, 1928.
(10) B. Brennand. Hindu Astronomy. London, 1896.
(11) A. B. Keith. A History of Sanskrit Literature. Oxford, 1928.
(12) Sir W. Haig. Cambridge History of India, Vol. 3: Turks and Afghans. Cambridge, 1928.
(13) Abhidhana-Rajendra, 7 Vols. Ratlam, 1913–25.
(14) Hindi Sabda Sagara. Parts 7–18, 25–42. Benares, 1924–28.

Accession Lists. Four quarterly lists of additions to the Library were published during the year and distributed to the members.

Preservation. The practice of dusting books with an insecticide and of periodically washing the shelves with an antiseptic solution was regularly maintained.

Binding. During the year, 1706 units, including books, pamphlets and periodicals, were bound at a cost of Rs. 1,856-10-0 out of a total budget allowance of Rs. 2,000 sanctioned for the purpose.

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The vigorous binding policy was continued and about 8,200 volumes have been bound in the last five years. With continued attention and activity our arrears in binding may perhaps be made good by the end of the year, which will allow a decrease of annual expenditure on binding.

Catalogue. The printing of the Author-Catalogue of books in European languages is progressing slowly on account of the amount of revision needed for the old titles and the lack of of time available to be given to the work.

Arrangement. An appreciable amount of shifting of books to arrive at a better internal arrangement on the shelves was performed during the year.

Shelving. Installation of special steel shelving for the MSS. in the Western Section remains to be effected, and provision has also to be made for further extension of the existing steel shelving, especially for the current accessions of periodical literature.

Finance.

Appendix III contains the usual statements showing our accounts for 1928. No change has been made in the form of their presentation.

New statements are the following :—

Statement No. 16, The Calcutta Science Congress Prize fund account.

Statement No. 20, Loan Account, being an account of loans granted to members of the staff, who contribute to the Provident Fund of the Society, from the Savings Bank Deposit Fund account of the Society.

Statements still carried over without change from the previous year pending final ascertainment of commitment and status before liquidation are :—

Statement No. 9, Catalogue of Scientific Serial Publications, Calcutta.

Statement No. 10, International Catalogue of Scientific Literature.

The other statements are presented as in the previous year and do not call for special comment.

The fund accounts again show their invested assets at their market values at the end of the year, and the investment account, Statement No. 22, shows the allocations of invested paper to each fund specifically, whilst as usual both market and face values of the investments are given in it.

Statement No. 26, shows the Balance Sheet of the Society and of the different funds administered by and through it.

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The funds belonging to or administered by the Society may be classified as follows:—

1. General Fund:
   (*a*) Permanent Reserve.
   (*b*) Working balance.
2. Specific funds belonging to the Society.
3. Funds administered by the Society.

At the end of the year the position of these funds as compared with their position at the end of 1927 was as follows:—

	Face value. 31st Dec., 1927.	Market value. 31st Dec., 1927.	Face value. 31st Dec., 1928.	Market value. 31st Dec., 1928.
	Rs.	Rs.	Rs.	Rs.
1. General Fund	2,33,794	1,84,112	2,43,794	1,85,413
(*a*) Permanent Reserve	1,91,694	1,44,004	2,01,600	1,46,108
(*b*) Working balance ..	42,100	40,108	42,194	39,305
2. Specific funds belonging to the Society	67,237	58,188	53,480	44,805
3. Funds administered by the Society	36,134	34,484	30,882	28,967
TOTAL ..	3,37,165	2,76,784	3,28,156	2,59,185

It will be seen that the total amount standing to the credit of the Permanent Reserve Fund has for the first time in the history of the Society passed a face value of Rs. 2,00,000, invested in 3½% Government Paper.

During the year Rs. 3,616 were received through admission fees, and no less than 15 members compounded for their subscriptions, to a total amount of Rs. 3,672. The grand total, Rs. 7,288, was as usual transferred to the Permanent Reserve. This was effected by a conversion at the market rates, according to a Council decision of 1925, of investments belonging to the temporary reserve of the working balance. (Government Paper 3½% to a face value of Rs. 10,000.)

A cash balance of Rs. 38 is being carried over for the ensuing year for adjustment under this head.

The Society received the following grants from the Government of Bengal as follows:—

For	Rs.	Statement.
Journals	2,000	1.
O.P. Fund No 1	9,750	2.
O.P. Fund No. 2	3,000	3.
Sanskrit MSS. Fund	3,600	4.
TOTAL ..	18,350	

The Government of Bengal's annual grant of Rs 3,200 for the publication of the Descriptive Catalogue of Sanskrit

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Manuscripts by MM. Haraprasad Shastri, which expired on the 31st March, 1928, was renewed by the Government during the year for a further period of five years in their letter No. 933 Misc., dated the 2nd July, 1928. Payment of the grant for 1928-29 has since been applied for and it is expected that the amount will be received early in the current year.

The Society also received during the year the Government of India's annual grant of Rs. 5,000 for the Arabic and Persian Manuscripts and Cataloguing fund. (Statement No. 5.)

The income derived from advertising during the year amounted to Rs. 2,250 instead of the budgetted amount of Rs. 6,000. This was due to remissness of our publicity agents, in consequence of which the Society has placed its publicity agency in other hands towards the end of the year.

The temporary investments of funds in fixed Deposit and Savings Bank are shown in Statement Nos. 23 and 24. An amount set aside for earmarked expenditure is shown in Statement No. 11.

Statement No. 19 gives the account of the amounts due to and by the Society for members' subscriptions, sales of publications and contingent charges.

Statement No. 15 gives the account of the Permanent Library Endowment Fund. An investment to the face value of Rs. 1,000 has been added to the corpus of this fund from donations received during the year.

The Government securities shown in Statement No. 22 are held in safe custody by the Imperial Bank, Park Street Branch. There was again a further depreciation at the end of the year of the Government securities held, amounting to a total of Rs. 8,683. The depreciation on the face value increased to Rs. 69,054 as against Rs. 60,371 at the end of 1927, affecting the balance sheet adversely to that extent.

The budget estimates for 1928 and the actuals for the year were as follows:—

Estimates:	Receipts.	Expenditure.
	Rs.	Rs.
Ordinary	51,100	51,010
Extraordinary	4,940	4,940
TOTAL ..	56,040	55,950
Actuals:		
Ordinary	47,819	49,537
Extraordinary	8,198	925
TOTAL ..	56,017	50,462

Of the receipts a sum of Rs. 7,288, derived from entrance fees and compounding fees, is classed as extraordinary and is not available for expenditure, as it has to be transferred

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to the Permanent Reserve. Of the extra income of Rs. 4,940 made available for work in connection with arrears in the publication of the Society's *Journal* only Rs. 925 was spent during the year, leaving still Rs. 4,015 available from this source for extra expenditure in 1929.

The ordinary income was about Rs. 3,300 below the estimate, practically accounted for by a falling off of income from advertising.

The ordinary expenditure was about Rs. 1,500 below the estimate. Members' subscriptions yielded Rs. 1,420 more than the estimated Rs. 14,000. On contingencies Rs. 250 were saved and on Insurance Rs. 500. Building repairs were not undertaken and the budget head of Rs. 2,000 allotted for them remained unexpended. For Library Binding Rs. 150 was left unexpended. The contribution to the Indian Science Congress was reduced by Rs 550 in view of the Society reprinting at its own cost the *Proceedings* of the Second Congress. Under some other headings trifling savings were effected.

On the expenditure side salaries absorbed Rs. 935 more than anticipated. Office furniture caused an extra expenditure of Rs. 240, and the repairs to one of the paintings of Rs. 205. On the *Journal* and *Memoirs* Rs. 925 was spent out of extraordinary income.

Budgetted income fell short under four heads by about Rs. 4,700, of which about Rs. 950 under the headings Interest, Miscellaneous and Sale of Publications, and Rs. 3,750 under the heading Advertising.

The excess of ordinary expenditure over ordinary income during the year was about Rs. 1,645.

The excess of extraordinary income over extraordinary expenditure was about Rs. 7,270.

Apart from the fluctuation in rates of our invested funds the year's working represented a profit of about Rs. 5,625.

The unexpended balance of Rs. 4,015 of the special allocation from the Publication Fund for work in arrears of publication of the Society's journals will be made available in next year's budget as extraordinary income.

The Budget estimates of probable expenditure have again been framed so as to meet demands under various heads based on vigorous activity in all departments of the Society's work. The receipts have been conservatively estimated.

No capital or extraordinary expenditure beyond the sum of Rs. 4,015 for publications, already mentioned above, has been included in the budget estimates. If any need for it arises during the ensuing year, it will form a subject for scrutiny and deliberation by Finance Committee and Council, and will be introduced as a special supplementary grant.

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Budget Estimates for 1929.

Ordinary Receipts.

	1928. Estimate.	1928. Actuals.	1929. Estimate.
	Rs.	Rs.	Rs.
Interest on Investments ..	9,800	9,546	9,500
Advertising	6,000	2,250	6,000
Annual Grant	2,000	2,000	2,000
Miscellaneous	800	536	500
Members' Subscriptions.. ..	14,000	15,421	14,500
Publications, Sales and Subscriptions	8,500	8,066	7,500
Proportionate Share from Funds ..	10,000	10,000	10,000
Total ..	51,100	47,819	50,000

Ordinary Expenditure.

Salaries and Allowances ..	25,000	25,935	26,000
Commission	500	437	500
Stationery	1,000	934	1,000
Fan and Light	..	367	..
Telephone	600	233	750
Taxes	1,760	1,753	1,750
Postage	1,750	1,714	1,750
Freight	100	42	100
Contingencies	1,000	756	1,000
Petty Repairs	250	236	150
Insurance	1,000	500	500
Menials' Clothing	200	194	200
Office Furniture	500	733	500
Artistic Possessions	100	305	100
Building Repairs	2,000	..	2,000
Provident Fund Share	500	504	550
Steel Shelving	..	..	..
Audit Fee	250	250	250
Books, Library	2,000	1,793	2,000
Binding, Library	2,000	1,857	2,000
Journal and Proceedings and Memoirs	8,500	8,500	8,500
Printing, Circulars	1,200	1,220	1,200
Contribution to I.S.C.	800	250	500
Total ..	51,010	48,513	51,300

Extraordinary Receipts.

By Admission Fees	1,560	3,601	1,600
Compounding Fees	500	3,672	600
To Publications by unspent amount allocation Publication Fund ..	4,940	925	4,015
Total ..	7,000	8,198	6,215

Extraordinary Expenditure.

To Permanent Reserve			
by Admission Fees ..	1,560	3,601	1,600
by Compounding Fees ..	500	3,672	600
To Publications	4,940	925	4,015
Total ..	7,000	8,198	6,215

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Publications.

Of the *Journal and Proceedings*, Vol. XXII (for 1926), two numbers were published, and of Vol. XXIII (for 1927), also two numbers. These aggregated 618 pages and 15 plates. The title pages and index for Vol. XXII were also published.

Of the *Memoirs* one number was published (76 pages and 1 plate).

A large number of matter is in type for both series, and an appreciable amount of further copy is in hand.

The *Proceedings* of the 15th Indian Science Congress (446 pages and 6 plates) and reprints of the *Proceedings* of 1st and 2nd Indian Science Congress (20 pages and 52 pages, respectively) were also published.

The *Sanskrit MSS. Catalogue* and the publications of the year in the *Bibliotheca Indica* are described elsewhere in the report.

The sales of the publications were very satisfactory. An amount of Rs. 9,455 was realised under this head, an increase of roughly Rs. 660 over the amount received in the previous year. These amounts do not take into account publications sent out on sale or return to the agents and as yet unsold.

The amount spent on publications during the year, exclusive of the *Sanskrit MSS. Catalogue* and *Bibliotheca Indica*, was slightly over Rs. 9,425.

The Baptist Mission Press.

Under the capable superintendence of Mr. P. Knight the Baptist Mission Press continued to act as our chief printers and gave again invaluable assistance and the closest co-operation.

During the absence on leave of Mr. P. Knight for part of the year, the officiating Superintendent, the Rev. D. Kyles, fully maintained the great traditions of the Press and rendered valued service.

Agencies.

Our European and Indian Agents remained the same throughout the year.

Exchange of Publications.

A request for the presentation of the Society's Publications was received from the "Chemistry House," Paris, and it was decided to present the Institution with papers relating to Chemistry published by the Society.

No new applications for exchange were considered during the year.

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Meetings.

The Ordinary Meetings of the Society were held regularly every month, with the exception of the recess months of September and October.

The time of meeting remained fixed at 5-30 p.m.

The recorded attendance was about the same as compared with the previous year, averaging 20 members and 2 visitors. The maximum attendances were in May and December with 29 and 28 members, and 2 and 1 visitors, respectively.

Three meetings of the Medical Section were held during the year.

Exhibits.

In the Ordinary Monthly Meetings a number of exhibits were shown and commented upon by the exhibitors. The following may be mentioned :—

R. B. Seymour Sewell : (*a*) Pre-historic remains from the ancient Indian city of Mohenjo-daro, Sind. (*b*) Perforated circular marble objects ; also an axe-head found associated with the remains of two individuals in a grave, in coral conglomerate, a quarter of a mile from the sea shore in Car Nicobar.

Johan van Manen : (*a*) Toba Batak (Sumatra) magical manuscript on tree bark. (*b*) Two flint celts from Java.

R. P. Chanda : *Terra cotta* figures and a few other objects from Mohenjo-daro.

K. N. Dikshit : Some newly discovered images from the Chittagong district acquired by the Government.

Communications.

Apart from papers submitted both for reading and subsequent publication, a number of communications were made from time to time in the Ordinary Monthly Meetings, not meant for subsequent publication.

Amongst such communications made during the year the following may be mentioned :—

K. N. Dikshit : (*a*) A new hoard of Kashmir coins found in Banda district, U.P. (*b*) A newly discovered Inscription from Nepal.

Johan van Manen : (*a*) The script of the Legends on the Harappa Seals. (*b*) On the Identity of the Tibetan Cāṇakyarājanītiśāstra and the Nīti Section in the Garuḍa Purāṇa.

General Lectures.

Three General Lectures were held before fairly numerous audiences of members and invited guests during the year 1928. They were as follows :—

Mr. Justice Gregory : "The Celadon and Blue and White Porcelains." January 24th.

Jadu Nath Sarkar : "The History of Shivāji." February 21st.

MM. H. P. Shāstrī : "The Eighteen Mahāpurāṇas." May 23rd.

Mr. Justice Gregory's lecture was illustrated by the exhibition of a rich selection of pieces from his private collection.

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Philology.

The philological activities of the year, in so far as not described under other headings, consisted of the reading of papers in the meetings and their publication in the *Journal.*

The number of new papers submitted this year was slightly greater than that of the year before.

In the *Journal* fourteen papers were published, aggregating 280 pages and containing one plate. Part of this matter has been described in the previous report as having been read in the meetings but not yet published.

The following papers were both read and published during the year:—

W. Ivanow: Some Persian Darwish Songs.
W. Ivanow: Jargon of Persian mendicant Darwishes.

Papers read in the monthly meetings, but not yet published, were:—

M. Hidayat Hosain: Tadhkirat at-Talib al Mu'allam of Sibt Ibn al-'Ajamī.
H. Hosten: Letter of Fr. Jerome Xavier (Lahore 1598) and of Fr. Manoel Pinheiro (Lahore 1599).
Sir J. C. Coyajee: Some Shahnamah Legends and their Chinese parallels.
Sir J. C. Coyajee: Astronomy and Astrology in the Bahram Yasht.
J. H. Hutton: Outline of Chang grammar, and vocabulary.
W. Ivanow: Persian as it is spoken in the valley of Birjand.
Haridas Mitra: The Royal seal of the Sena Kings of Bengal and Sadasiva Worship.
L. P. E. Pugh: A recent case of Sati and its problems.
K. C. Chatterjee: Panini, his followers and detractors.
C. W. Gurner: Asvaghosa and the Ramayana.
B. N. Banerjee: Iswarchandra Vidyasagar as a promoter of female Education in Bengal.
K. P. Chattopadhyaya: Social organisation of the Satkarnis and Sungas.
Jagannath Das Ratnakara: The Historical Stone Horse in the Lucknow Museum.
Siddheswara Varma: Phonetics of Lhandi.
L. Bogdanov: The Afghan Weights and Measures.
Bibhutibhusan Datta: The Hindu Method of testing Arithmetical operations.
Sukumar Ranjan Das: Lunar and Solar Eclipses in Hindu Astronomy.

Natural History: Biology.

The year was again one of energetic biological activity. The following eleven papers were read in the monthly meetings and most of them are in type to be published in the first issue of the *Journal* in the current year:—

E. N. Ghosh: On the identification of Leeches recognised by Susruta.
H. C. Das-Gupta: Batrachian and reptilian Remains found in the Panchet Beds at Deoli.
S. C. Law: On pericroctus speciosus (Lath) occurring in Ranchi District.

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S. L. Hora: Lunar Periodicity in the production of Insects.
S. L. Hora: A further note in the Manuscript Drawings of Fish in the McKenzie collection.
B. Prashad: On the dates of publication of *The Fishes of India* by Dr. Francis Day.
S. L. Hora: Remarks on the Günther-Day controversy regarding the specific validity of Hamilton-Buchanan's Cyprinus Chagunio.
J. L. Bhaduri: A note on a double Chick Embryo.
S. L. Hora: The habitat and systematic position of two imperfectly known Loaches from Afghanistan.
S. Krishna and H. Chaudhuri: A preliminary Report on Injection Experiments with special reference to the production of Alkaloids and general metabolism in plants.
Kalipada Biswas: Algal Flora of the Chilka Lake.

Two papers read during the previous year were published.

Natural History: Physical Sciences.

Two papers dealing with the non-biological Sciences were read during the year. They both treated of Meteorology.

R. B. S. Sewell: Temperature and Salinity of the surface water of the Bay of Bengal and Andaman Sea, with reference to the Laccadive Sea.
V. V. Sohoni: Bibliography of the Meteorological papers published by the Asiatic Society of Bengal.

The first will be published in the *Memoirs*, the latter in the *Journal*. Both are already print-ordered.

During the year we published Col. Sewell's fourth paper on *Geographic and Oceanographic Research in Indian Waters* to which a special volume of the *Memoirs* has been allocated. His first mentioned paper is the fifth in the series.

Anthropology.

The outstanding anthropological event of the year was the preparation of Dr. J. H. Hutton's *Diaries of Two Tours in the Unadministered Area East of the Naga Hills* to open a new volume of the *Memoirs*. The paper consists of 72 pages of print and 16 plates and was published in the first week of January of the present year.

Nine papers read in the previous year were published, aggregating 146 pages print with 12 plates.

The following new papers were read in the monthly meetings, but have not yet been published:—

H. C. Das-Gupta: Two types of sedentary games prevalent in British Gharwal.
K. N. Chatterjee: The use of Nose Ornaments in India.
D. N. Majumdar: Some of the Worship Festivals of the Hos of Kolhan.
Kalipada Mitra: Marriage Customs in Behar.
Pravash Ch. Basu: Head-dress of the Hill-tribes of Assam.
J. H. Hutton: Wild men in Assam.
D. N. Majumdar: Custom and Control in Primitive Society.

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D. N. Majumdar: The Role of Family in Primitive Society.
D. N. Majumdar: The Miracles of Witch-craft.
D. N. Majumdar: Culture-Complex.
N. K. Basu: Material Culture of the Hos of Seraikola.
Mrs. C. de Beauvoir Stocks: Haramukh Legends.

Medical Section.

The Medical Secretary was absent from India during the larger part of the year. The President took informal charge of the interests of the Section during the Secretary's absence.

Three meetings were held with attendances varying from 7 to 15.

A medical publication during the year by a Fellow of the Society was *A treatise on Kala-Azar* by Dr. U. N. Brahmachari, of which the author presented a copy to the Society's Library.

Bibliotheca Indica.

The work during the year in this department was most satisfactory.

Actually published were seven issues, Nos. 1490, 1494, 1496, 1501, 1502, 1503 and 1504, of an aggregate bulk of 22 fascicle-units of 96 pages. The detailed list is given in the Appendix to the Report.

Of the above issues four completed the entire work, namely:—

A Kui Grammar.
Second supplement to the Concise Descriptive Catalogue of Persian MSS., A.S.B. Collections.
Śrī Kṛiṣṇāvatāra-līlā.
Gṛhastharatnākara.

In the Hinduistic Series work was continued on seven works as follows:—

1. Vaikhānasa-smārta-sūtra, English translation.
2. Nityācārapradīpa, Sanskrit.
3. Vidhāna-pārijāta, Sanskrit.
4. Śatapathabrāhmaṇa, Sanskrit.
5. Ātmatattvaviveka, Sanskrit.
6. Pañca-viṁśa-brāhmaṇa, English Translation.
7. Śrī Ramāvatāra-līlā, Kashmiri.

In the Islamic Series work was continued on the following seven works:—

1. 'Amal-i-Ṣālih, Persian.
2. Haft Iqlīm, Persian.
3. Ma 'athir-i Rahīmī, Persian.
4. Tārikh-i-Mubārak shāhi, Persian.
5. Majmua'-ul-Baḥrain, Persian, and English translation.
6. Ṭabaqāt-i-Akbarī, Persian.
7. Ṭabaqāt-i-Akbarī, English translation.

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During the year publication of the following works was newly sanctioned, and work on the first two already begun:—

1. Pañca-viṁśa-brāhmaṇa, English translation.
2. Kui Vocabulary, English.
3. Varṇaratnākara, Maithilī.
4. Mkah hgro ma hgro ba bzang mohi rnam thar, Tibetan.

During the year the reprint of the following works was sanctioned, and work on the first two already begun:—

1. Nyāyabindutīkā, Sanskrit.
2. Vivādaratnākara, Sanskrit.
3. Saundarānandakāvyam, Sanskrit.

Arabic and Persian Manuscripts, Search and Catalogue.

Important progress was again made during the current year.

The second Maulvi continued his work on the preparation of index slips for all printed works in the Arabic and Persian library section.

Binding and repairing of previously and newly acquired MSS. was continued; 276 volumes were so bound and repaired during the year, making a total of over 1,225 volumes bound since the end of 1924.

During the years 61 volumes of Persian and Arabic MSS. were newly acquired through purchase at a cost of under Rs. 600.

Mr. Ivanow completed the MS. draft of the theological portion of his Descriptive Catalogue of the Arabic MSS. in the Society's collections, consisting of about 1,125 notices.

During the year the Second Supplement of Mr. Ivanow's Descriptive Catalogue of the Persian MSS. in the collections of the Society was published, completing the catalogue up to the additions to ultimo December, 1927.

Mr. Ivanow was granted long leave in August and spent his leave in Persia. He returned to Calcutta in the last days of December. He was commissioned to purchase further MSS. for the Society whilst in Persia, and a report concerning the result of his endeavours will be incorporated in next year's report.

Since 1923 the Persian and Arabic MSS. in the Society's collections have been increased by about 500. This very gratifying result has caused the problem of storage space to become acute. In the Persian and Arabic MS. room little space is now left for the storage of further MS. material, and the question of revised or additional shelving will soon have to be considered.

The staff of the department remained unchanged during the year.

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Catalogue of Sanskrit Manuscripts.

MM. Haraprasad Shastri's great undertaking made again appreciable progress, notwithstanding the fact that the venerable author completed his 75th year.

The fifth volume was published during the year, enriched by a voluminous preface. It describes 1,080 items in 1,118 printed pages.

The next volume, describing the grammatical manuscripts, 732 in number, is almost ready and it is hoped that this will be issued during 1929.

As soon as volume VI is out of the way, work will be begun on volume VII, which will describe the Kāvya Manuscripts. A revision of the slips for this volume has shown that it will deal with 864 items.

During the year a lull in the printing has been utilised to make a thorough inspection of the thousands of slips of copy waiting their turn to be sent to the press The material for the four next volumes: on Kāvya; on Philosophical Systems (Darsana); on Astronomy, Astrology and Mathematics; and for the Vernacular manuscripts, has been arranged in its final form. It is now estimated that four to five volumes will be sufficient to complete the series after those mentioned just now, making 14 to 15 volumes in all.

The staff of the department remained unchanged during the year.

Numismatics.

One Numismatic Supplement, No. 40 (for 1926 and 1927) was prepared, and is to be published at an early date.

Our difficulties in arranging for a regular annual output of Numismatic matter remained the same as in the previous years, though it seems that they may be overcome in the long run. Discussions with the authorities of the Numismatic Society of India were started on the subject and have given hope for a solution of the problem.

During the year the Society received the gift of a few coins for its collections through the usual official channels.

Summary.

The year 1928 was one in which prosperity and activity were maintained unabated. The membership increased by 48 and for the first time in the history of the Society the year ended with a total well over 600, namely 622 The number of life-members increased from 33 to 46. The Council was active and its Committees performed valuable work. The staff worked well, but the office work continues to present demands beyond the possibility of full discharge by such staff as the

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Society can at present afford. The correspondence of the year constituted a record. The many official and ceremonial obligations of the Society were duly attended to, and international intellectual relations were fully maintained. The number of distinguished visitors to the Society's rooms increased during the year. The various awards by the Society for scholarly merit were administered with care, and their governing rules were improved. Some new awards were either instituted or offers for their institution were received and are under consideration. A few historical and artistic objects of value were received as presentations. The Library added about 450 volumes to its collections and more than 1,700 volumes were bound. The permanent Library Endowment Fund received further gifts and its invested *corpus* rose to Rs. 8,000, face value. The financial position of the Society was generally satisfactory. Investments to a face value of Rs. 10,000 were added to the Permanent Reserve Fund. The year's working produced a small deficit for temporary causes. The chief financial problem before the Society remains a very substantial strengthening of the Permanent Reserve Fund, not by thousands but by lacs of Rupees. The publication of *Journal* and *Memoirs* during the year progressed satisfactorily; what was not actually issued was prepared for early issue in the new year. The monthly meetings continued to be of interest and to be well attended. A number of interesting exhibits were shown during the year. Three successful general lectures were given. The number of Philological papers presented during the year amounted to nineteen; an increase over the total of the year before. Eleven papers on Biology were contributed. Two capital Meteorological papers were received. The new Anthropological papers numbered twelve. In all, no less than 44 new papers were received, several of considerable length. The Medical Section held three meetings. The issues in the *Bibliotheca Indica* were numerous and important, aggregating over 2,000 printed pages, completing four works, in altogether 7 issues. Two new works were started in this series, and publication of a number of new works sanctioned. The Catalogue of Persian Manuscripts in the Society's collections was completed up to the accessions to the end of 1927 by the issue of its second supplement. 61 volumes of Persian and Arabic MSS. were added to the collection, and 276 volumes were bound. The preparation of the Manuscript of a Descriptive Catalogue of the Arabic MSS. in the Society's collection was continued and brought to a completion of the theological portion, containing some 1,125 MSS. A further, the fifth, volume of the Catalogue of the Society's Sanskrit MSS. was published.

The good results of the year are no doubt largely due to the spirit of enthusiasm for the causes served by the Society which prevails amongst its members and officers. Enthusiasm

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expressing itself in practical efficiency begets harmony and leads to creative work. No mere administrative skill or energy in routine work can make an Institution truly great. A constant realisation of the higher aim and the distant perspective is needed to kindle and keep alive that burning zeal from which alone action flows that can be lasting in effect, uninterrupted in improvement and increasing in strength.

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[APPENDIX I.]

Membership Statistics.

(As calculated for December 31st, for 30 years.)

YEAR.	ORDINARY.								EXTRA-ORDINARY.				FELLOWS.	
	PAYING.				NON-PAYING.									
	Resident.	Non-Resident.	Foreign.	Total.	Absent.	Life.	Total.	Total Ordinary Members.	Centenary Honorary.	Associate.	Total.	Grand Total Membership.	Honorary.	Ordinary.
1899 ..	120	119	13	252	28	21	49	301	4	12	16	317	26	..
1900 ..	116	124	18	258	31	22	53	311	4	12	16	327	26	..
1901 ..	123	133	13	269	37	22	59	328	4	12	16	344	26	..
1902 ..	126	126	14	266	47	21	67	333	4	13	17	350	26	..
1903 ..	127	126	15	268	46	21	67	335	4	13	17	352	24	..
1904 ..	132	130	14	276	46	21	67	343	4	13	17	360	30	..
1905 ..	144	133	12	288	48	20	68	356	4	13	17	373	29	..
1906 ..	173	147	15	335	52	20	72	407	4	12	16	423	30	..
1907 ..	174	175	20	369	31	20	51	420	4	12	16	436	28	..
1908 ..	181	193	17	391	38	19	57	448	4	13	17	465	30	..
1909 ..	183	217	13	413	40	20	60	473	4	14	18	491	28	..
1910 ..	209	217	16	442	43	23	66	508	4	14	18	526	27	17
1911 ..	200	225	19	444	53	22	75	519	3	14	17	536	28	19
1912 ..	203	229	19	451	43	23	66	517	3	13	16	533	27	24
1913 ..	200	211	19	430	46	23	69	499	3	14	17	516	27	28
1914 ..	191	187	19	397	50	26	76	473	3	14	17	490	24	27
1915 ..	171	188	21	380	40	25	65	445	3	15	18	463	29	31
1916 ..	145	159	18	322	60	25	85	407	3	15	18	425	26	33
1917 .	150	144	15	309	45	24	69	378	2	12	14	392	22	35
1918 ..	153	145	17	315	43	24	67	382	2	10	12	394	22	39
1919 ..	141	128	15	284	64	25	89	373	2	11	13	386	18	36
1920 ..	161	134	15	310	32	26	58	368	2	11	13	381	28	38
1921 ..	160	132	16	308	26	26	51	359	2	12	14	373	28	40
1922 ..	160	141	16	317	26	26	52	369	2	13	15	384	30	39
1923 ..	147	120	13	280	30	27	57	337	2	11	13	350	28	37
1924 ..	209	134	12	355	29	28	57	412	2	12	14	426	27	37
1925 ..	263	137	12	412	23	27	50	462	2	12	14	476	26	34
1926 ..	319	162	20	501	23	28	51	552	2	12	14	566	25	34
1927 ..	328	167	18	513	28	33	61	574	2	13	15	589	28	38
1928 ..	344	167	23	534	42	46	88	622	1	12	13	635	28	40

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[APPENDIX II.]

List of Publications issued by the Asiatic Society of Bengal during 1928.

(a) Bibliotheca Indica (New Series):

	Price. Rs. A. P.
No. 1490: Nityācāra-pradīpa, Text, Vol. 2, Fasc. 5 (4 units)	3 0 0
No. 1494: Ṭabaqāt-i-Akbarī, English transl., Vol. I, Fasc. 2 (2 units)	2 8 0
No. 1496: A grammar of the Kui Language (3 units)	3 12 0
No. 1501: Śrī Kṛisṇāvatāra-līlā, Kāshmīrī (3 units)	3 12 0
No. 1502: Second Supplement to Descriptive Catalogue of Persian MSS., A.S.B. Collections, Pp. XXII, 138	3 12 0
No. 1503: 'Amal-i-Ṣāliḥ, Vol. 3, Fasc. 1 (1 unit) ..	1 0 0
No. 1504: Gṛhastharatnākara, Text (7 units) ..	5 4 0

(b) Memoirs:

Vol. IX, No. 4: Temperature and Salinity of the Coastal water of the Andaman Sea	2 13 0

(c) Journal and Proceedings (New Series):

Vol. XXII.	
No. 5	2 4 0
No. 6	6 6 0
Vol. XXIII.	
No. 1	7 14 0
No. 2	4 8 0

Title page and Index for Vol. XXII. (Free to Members and Subscribers on application.)

(d) Catalogues:

Descriptive Catalogue of Sanskrit Manuscripts Vol. V: Purāṇa, Pp. ccxxx, 898	15 0 0

(e) Miscellaneous:

Proceedings, First Indian Science Congress (Reprint)	0 12 0
Proceedings, Second Indian Science Congress (Reprint)	1 8 0
Proceedings, Fourteenth Indian Science Congress ..	9 12 0
Proceedings, Fifteenth Indian Science Congress ..	12 12 0

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[APPENDIX III.]

Abstract Statement

of

Receipts and Disbursements

of the

Asiatic Society of Bengal

for

the Year 1928

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STATEMENT No. 1.

1928. *Asiatic Society*

Dr.

	Rs. As. P.	Rs. As. P.
To Establishment.		
Salaries and Allowances	25,935 6 7	
Commission	437 5 6	
		26,372 12 1
To Contingencies.		
Stationery	934 1 0	
Printing Circulars, etc.	1,219 12 0	
Fan and Light	367 3 9	
Telephone	233 5 2	
Taxes	1,753 4 0	
Postage	1,714 1 6	
Freight	41 15 6	
Contingencies	756 4 2	
Audit Fee	250 0 0	
Petty Repairs	235 12 0	
Insurance	500 0 0	
Menials' Clothing	193 8 0	
Furniture	733 0 0	
Upkeep of Paintings	305 0 0	
		9,237 3 1
To Library and Collections.		
Books	1,792 14 4	
Binding	1,856 10 0	
		3,649 8 4
To Publications.		
Journal and Proceedings and Memoirs ..	9,425 8 6	
		9,425 8 6
To Contributions:		
Indian Science Congress for 1928 ..	250 0 0	
Provident Fund Contribution for 1928 ..	503 12 9	
		753 12 9
To Sundry Adjustments.		
Bad Debts written-off	1,669 4 0	
Depreciation on Investments revalued on 31-12-28	7,639 7 0	9,308 11 0
Balance as per Balance Sheet	..	1,85,413 12 8
	Total ..	2,44,161 4 5

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STATEMENT No. 1.

of Bengal. *1928.*

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		1,84,498 12 7
By Cash Receipts.		
Interest on Investments	9,545 12 4	
Miscellaneous	535 8 6	
Government Allowance	2,000 0 0	
Advertising	2,250 0 0	
		14,331 4 10
By Personal Account.		
Members' Subscriptions	16,717 1 0	
Compounding Subscriptions	3,672 0 0	
Admission Fees	3,616 0 0	
		24,005 1 0
By Transfer from Funds:		
Proportionate Share in General Expenditure by various Funds	10,000 0 0	
Publication Fund for Publications ..	10,381 4 6	
Permanent Library Endowment Fund Account, return of advance	94 13 6	
Profits on sale of War Bonds	850 0 0	
		21,326 2 0
Total ..		2,44,161 4 5

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STATEMENT No. 2.

1928. *Oriental Publication*

From a monthly grant made by the Government of Bengal for the publi-
(Rs. 500), and for the publication of Sanskrit

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account		2,041 12 4
To Cash Expenditure.		
Printing	9,149 13 0	
Editing	2,560 0 0	
Cataloguing	550 0 0	
		12,259 13 0
To Proportionate Share in General Expenditure	3,000 0 0	
To Return of Advance made for Cataloguing	10,470 0 0	
		13,470 0 0
Total ..		27,771 9 4

STATEMENT No. 3.

1928. *Oriental Publication*

From a monthly grant made by the Government of Bengal of
Historical

Dr.

	Rs. As. P.	Rs. As. P.
To Cash Expenditure.		
Printing	..	3,760 13 0
To Return of Advances received for printing Maasir-i-Rahimi, etc.	..	16,712 5 6 953 7 0
To Balance as per Balance Sheet ..	..	
Total ..	..	21,426 9 6

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STATEMENT No. 2.

Fund, No. 1, in Account with A.S.B. *1928.*

cation of Oriental Works and Works of Instruction in Eastern Languages Works hitherto unpublished (Rs. 250).

Cr.

By Cash Receipts.

	Rs. As. P.	Rs. As. P.
Annual Grant	9,750 0 0	
Return of Advance made for printing Kashmiri Dictionary	994 10 0	10,744 10 0
By Return of Advance made for printing Maasir-i-Rahimi, etc.		16,712 5 6
By Balance as per Balance Sheet		314 9 10
Total ..		27,771 9 4

STATEMENT No. 3.

Fund, No. 2, in Account with A.S.B. *1928.*

Rs. 250 for the publication of Arabic and Persian Works of Interest.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		18,426 9 6
By Cash Receipts.		
Annual Grant, 1928-29		3,000 0 0
Total ..		21,426 9 6

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STATEMENT No. 4.

1928. *Sanskrit Manuscripts Fund*

From an annual grant of Rs. 3,200 made by the Government of Bengal by the Society; and Rs. 3,600 from the

Dr.

To Cash Expenditure.

	Rs. As. P.	Rs. As. P.
Contingencies	15 8 0	
Pension	120 0 0	
Printing	5 0 0	
Allowance	3,600 0 0	
Binding	13 0 0	
		3,753 8 0
To Proportionate Share in General Expenditure	..	2,000 0 0
To Balance as per Balance Sheet ..	..	13,761 2 3
Total ..	..	19,514 10 3

STATEMENT No. 5.

1928. *Arabic and Persian Manuscripts*

From an annual grant of Rs. 5,000 made by the Government of India for by the Society; for the purchase of further Manuscripts, Manuscripts found in

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account	..	7,240 6 9
To Cash Expenditure.		
Manuscripts Purchase	574 8 0	
Binding	515 4 0	
Cataloguing	2,750 0 0	
		3,839 12 0
To Proportionate Share in General Expenditure	..	2,500 0 0
To Balance as per Balance Sheet ..	..	1,889 13 3
Total ..	..	15,470 0 0

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STATEMENT No. 4.

Account, in Account with A.S.B. *1928.*

for the publication of the Catalogue of Sanskrit Manuscripts acquired same Government for research work.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		15,914 10 3
By Cash Receipts.		
Annual Grant for cataloguing		3,600 0 0
Total ..		19,514 10 3

STATEMENT No. 5.

Fund Account, in Account with A.S.B. *1928.*

the cataloguing and binding of Arabic and Persian Manuscripts, acquired and for the preparation of notices of Arabic and Persian various Libraries in India.

Cr.

By Cash Receipts.

	Rs. As. P.	Rs. As. P.
Annual Grant from the Government of India for 1928-29		5,000 0 0
By Return of Advance made for cataloguing ..		10,470 0 0
Total ..		15,470 0 0

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STATEMENT No. 6.

1928. *Barclay Memorial*

From a sum of Rs. 500 odd given in 1896 by the Surgeon encouragement of Medical

Dr.

To Cash Expenditure.

	Rs. As. P.	Rs. As. P
Medal	..	13 0 0
To Depreciation Investments revalued on 31-12-28	..	16 2 0
To Balance as per Balance Sheet—		
Rs. 400 3½% G.P.N., 1854-55		
,, 100 ,, ,, 1900-01 ..	435 0 0	
,, 100 ,, ,, 1865		
Accumulated cash balance	74 6 8	
		509 6 8
Total	..	538 8 8

STATEMENT No. 7.

1928. *Servants' Pension Fund*

Founded in 1876 as the Piddington Pension Fund

Dr.

	Rs. As. P.	Rs. As. P.
To Depreciation Investments revalued on 31-12-28	..	53 12 0
To Balance as per Balance Sheet—		
Rs. 2,000, 3½% G. P. Notes ..	1,450 0 0	
Accumulated Cash balance	194 9 1	
		1,644 9 1
Total ..		1,698 5 1

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STATEMENT No. 6.

Fund Account, in Account with A.S.B. *1928.*

General, I.M.S., for the foundation of a medal for the and Biological Science.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		521 2 8
By Cash Receipts.		
Interest realized during the year		17 6 0
Total ..		538 8 8

STATEMENT No. 7.

Account, in Account with A.S.B. *1928.*

with Rs. 500 odd from the Piddington Fund.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		1,610 1 10
By Cash Receipts.		
Interest realized for the year	70 0 0	
Donation	18 3 3	88 3 3
Total ..		1,698 5 1

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STATEMENT No. 8.

1928. *Building Fund*

From a sum of Rs. 40,000 given by the Government of India proceeds of a portion

Dr.

	Rs. As. P.	Rs. As. P.
To Depreciation Investments revalued on 31-12-28	..	349 6 0
To Balance as per Balance Sheet—		
Rs. 13,000/- 3½% G.P. Notes ..	9,425 0 0	
Accumulated Interest	1,967 6 6	
		11,392 6 6
TOTAL ..		11,741 12 6

STATEMENT No. 9.

1928. *Catalogue of Scientific Serial Pub-*

Dr.

	Rs. As. P.
To Balance as per Balance Sheet	415 0 0
TOTAL ..	415 0 0

STATEMENT No. 10.

1928. *International Catalogue of Scien-*

Dr.

	Rs. As. P.
To Balance as per Balance Sheet	4,424 7 8
TOTAL ..	4,424 7 8

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STATEMENT No. 8.

Account, in Account with A.S.B. *1928.*

towards the rebuilding of the Society's premises, and from the sale of the Society's land.

Cr.

	Rs. As. P.
By Balance from last Account	11,286 12 6
By Cash Receipts.	
Interest realized during the year	455 0 0
Total ..	11,741 12 6

STATEMENT No. 9.

lications, Calcutta, in Account with A.S.B. *1928.*

Cr.

	Rs. As. P.
By Balance from last Account	415 0 0
Total ..	415 0 0

STATEMENT No. 10.

tific Literature, in Account with A.S.B. *1928.*

Cr.

	Rs. As. P.
By Balance from last Account	4,424 7 8
Total ..	4,424 7 8

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STATEMENT No. 11.

1928. *Akbarnama Reprint*

From a sum set apart in 1923 for

Dr.

		Rs. As. P.
To Balance as per Balance Sheet		7,764 10 8
TOTAL ..		7,764 10 8

STATEMENT No. 12.

1928. *Provident Fund Ac-*

From contributions by the

Dr.

		Rs. As. P.
To Balance as per Balance Sheet		4,550 11 3
TOTAL ..		4,550 11 3

STATEMENT No. 13.

1928. *Sir William Jones Memorial*

From a sum gifted for the purpose in

Dr.

To CASH EXPENDITURE.

	Rs. As. P.	Rs. As. P.
Cost of Medal	174 14 0	
Cost of preparing Dies for the Medal ..	350 0 0	524 14 0
To Depreciation Investments revalued on 31-12-1928	..	80 10 0
To Balance as per Balance Sheet—	Rs. As. P.	
Rs. 3,000, 3½% G.P. Notes	2,175 0 0	
Accumulated Interest	0 4 0	2,175 4 0
TOTAL ..		2,780 12 0

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STATEMENT No. 11.

Account, in Account with A.S.B. *1928.*

the reprint of the Akbarnama in England.

Cr.

	Rs. As. P.
By Balance from last Account	7,764 10 8
TOTAL ..	7,764 10 8

STATEMENT No. 12.

count, in Account with A.S.B. *1928.*

Staff of the Society.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		3,456 8 8
BY CASH RECEIPTS.		
Staff Contribution for the year ..	503 12 9	
Interest on Loans realized during the year	3 14 0	
A.S.B. Contribution for the year ..	503 12 9	
		1,011 7 6
By Interest accrued for 1927		82 11 1
TOTAL ..		4,550 11 3

STATEMENT No. 13.

Fund Account, in Account with A.S.B. *1928.*

1926, by Dr. U. N. Brahmachari.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account..		2,444 10 0
BY CASH RECEIPTS.		
Interest realized for the year	94 4 0	
Donation ..	241 14 0	
		336 2 0
TOTAL ..		2,780 12 0

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STATEMENT No. 14.

1928. *Annandale Memorial Fund*

From donations by subscription,

Dr.

To Cash Expenditure.

	Rs. As. P.	Rs. As. P.
Cost of Engraving letters on Medal ..	..	1 2 0
To Depreciation Investments revalued on 31-12-28	..	80 10 0
To Balance as per Balance Sheet—		
Rs. 3,000, 3½% G.P. Notes	2,175 0 0	
Accumulated Cash balance	427 3 0	
		2,602 3 0
Total	..	2,683 15 0

STATEMENT No. 15.

1928. *Permanent Library Endowment*

From gifts received,

Dr.

To Cash Expenditure.

	Rs. As. P.	Rs. As. P.
Purchase of Investments	..	745 1 10
To Return of Advance to A.S.B. ..	..	94 13 6
To Depreciation on Investments revalued on 31-12-28	..	463 2 0
To Balance as per Balance Sheet—		
Rs. 8,000, 3½% G.P. Notes ..	5,800 0 0	
Accumulated Cash balance	6 8 8	
		5,806 8 8
Total	..	7,109 10 0

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STATEMENT No. 14.

Account, in Account with A.S.B. *1928.*

started in 1926.

Cr.

	Rs. As. P.
By Balance from last Account	2,589 5 0
By Cash Receipts.	
Interest realized for the year	94 10 0
Total ..	2,683 15 0

STATEMENT No. 15.

Fund Account, in Account with A.S.B. *1928.*

started in 1926.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account		5,263 2 0
By Cash Receipts.		
Interest realized for the year	221 8 0	
Donations	625 0 0	
		846 8 0
By Investments purchased during the year, credited, Face Value		1,000 0 0
Total ..		7,109 10 0

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STATEMENT No. 16.

1928. *Calcutta Science Congress Prize*

Dr.

		Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet	..	..	2,239 1 3
TOTAL	..		2,239 1 3

STATEMENT No. 17.

1928. *Publication Fund*

From sale proceeds

Dr.

To CASH EXPENDITURE.

	Rs. As. P.	Rs. As. P.
Printing	..	1,377 0 0
To return of Advance for Printing ..	..	994 10 0
To proportionate share in General Expenditure	2,500 0 0	
To Books returned, etc.	116 12 0	
To Publications of the A.S.B.	10,381 4 6	
		12,998 0 6
		13,731 13 5
To Balance as per Balance Sheet ..	..	
TOTAL ..		29,101 7 11

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STATEMENT No. 16.

Fund Account, in Account with A.S.B. *1928.*

Cr.

By Cash Receipts.

	Rs. As. P.	Rs. As. P.
Funds Received		2,239 1 3
Total ..		2,239 1 3

STATEMENT No. 17.

Account, in Account with A.S.B. *1928.*

of publications.

Cr.

	Rs. As. P.	Rs. As. P.
By Balance from last Account..		18,448 6 3
By Cash Receipts.		
Interest realized for the year	525 0 0	
Cash Sales of Publications	543 8 0	
		1,068 8 0
By Personal Account.		
Credit Sales of Publications	7,476 4 0	
Subscriptions to Journal and Proceedings	1,436 0 0	
Miscellaneous	31 3 0	
		8,943 7 0
By Transfer.		
Interest realized on Fixed Deposit, London	584 5 4	
Exchange Profits on Fixed Deposit, London	56 13 4	
		641 2 8
Total ..		29,101 7 11

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STATEMENT No. 18.

1928. *Fixed Deposit*

From a sum set aside to pay for the

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account	..	9,508 11 9
To Interest accrued on Fixed Deposit ..	584 5 4	
To Profits on Exchange rate	56 13 4	
		641 2 8
TOTAL ..		10,149 14 5

STATEMENT No. 19.

1928. *Personal*

Dr.

	Rs. As. P.	Rs. As. P.
To Advances	..	6,304 1 5
Asiatic Society's Subscriptions, etc. ..	24,005 1 0	
Subscriptions to Journal and Proceedings and from Book Sales, etc., from Publication Fund	8,943 7 0	32,948 8 0
TOTAL ..		39,252 9 5

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STATEMENT No. 18.

Account, London. *1928.*

printing of the Kashmiri Dictionary.

Cr.

	Rs.	As.	P.
By Printing Charges	1,377	0	0
By return of Advance for Printing	994	10	0
By Balance as per Balance Sheet	7,778	4	5
TOTAL ..	10,149	14	5

STATEMENT No. 19.

Account. *1928.*

Cr.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account ..	..			57	8	9
By Cash Receipts during the year ..	..			36,624	12	9
By Bad Debts written off, A.S.B. Account	1,669	4	0			
By Books returned, etc. Pub. Fund Account	116	12	0			
				1,786	0	0

By Outstandings.	Amount due to the Society.			Amount due by the Society.		
	Rs.	As.	P.	Rs.	As.	P.
Members ...	4,328	13	0	339	13	0
Subscribers ...	...	...	...	84	0	0
Bill Collector's Deposit ...	...	...	...	100	0	0
Miscellaneous ...	2,205	14	8	5,226	10	9
	6,534	11	8	5,750	7	9

By Balance ..	784	3	11	
TOTAL ..	39,252	9	5	

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STATEMENT No. 20.

1928. *Loan Ac-*

Dr.

To Cash Expenditure.

		Rs. As. P.
Advances paid to members of Staff		610 0 0
Total ..		610 0 0

STATEMENT No. 21.

1928. *(1) Investment*

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account ..	10,000 0 0	10,550 0 0
To Profits on Sale of War Bonds ..	..	850 0 0
Total ..	10,000 0 0	11,400 0 0

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STATEMENT No. 20.

count, in Account with the S.B. Deposit Account. *1928.*

Cr.

By Cash Receipts.

	Rs.	As.	P.
By return of advances	310	0	0
By Balance as per Balance Sheet	300	0	0
Total ..	610	0	0

STATEMENT No. 21.

Account (War Bonds). *1928.*

Cr.

	Rs.	As.	P.	Rs.	As.	P.
By Sale Proceeds of 5½% W. Bonds of 1928, Rs. 10,000/- F. Value	10,000	0	0	11,400	0	0
Total ..	10,000	0	0	11,400	0	0

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STATEMENT No. 22.

1928. (4) *Investment*

Dr.

	Rs.	As.	P.	Rs.	As.	P.
To Balance from last Account ..	2,87,800	0	0	2,76,706	3	10
To Conversion of 5½% W.B., 1928 into 4½% G. Loan	11,400	0	0	11,400	0	0
To Purchase of Investments for the P.L.E. Fund	1,000	0	0	1,000	0	0
TOTAL ..	3,00,200	0	0	2,89,106	3	10

Face Value Rs.	FUNDS.	Rate @ Rs. %	31st December, 1928, Valuation. Rs.	A.	P.	Valuation as per Individual Account. Rs.	A.	P.	Less Depreciation on 31st December, 1928. Rs.	A.	P.
	ASIATIC SOCIETY OF BENGAL.										
	PERMANENT RESERVE.										
16,700	3½% G. Loan No. 155119, 1842-43	72/8/-									
1,00,000	3½% G. Loan No. 216811, 1854-55	72/8/-									
53,700	3½% G. Loan No. 216812, 1854-55	72/8/-									
5,000	3½% G. Loan No. 029544, 1879	72/8/-	1,46,108	12	0	1,90,506	13	10	44,398	1	10
1,000	3½% G. Loan No. 029548, 1879	72/8/-									
24,700	3½% G. Loan Part of No. 337428, 1865	72/8/-									
500	3 % G. Loan No. 093715, 1896-97	62/4/-									
	TEMPORARY RESERVE.										
6,600	3½% G. Loan Part of No. 337428, 1865 ...	72/8/-									
25,000	3½% G. Loan No. 238369, 1900-01	72/8/-	52,483	2	0	69,129	0	0	16,645	14	0
26,000	3½% G. Loan No. 238816, 1900-01	72/8/-									
11,400	4½% G. Loan, 1955-60 ..	94/1/-									
	BUILDING FUND.										
13,000	3½% G. Loan Part of No. 337428, 1865	72/8/-	9,425	0	0	13,000	0	0	3,575	0	0
	PENSION FUND.										
2,000	3½% G. Loan No. 029546, 1879	72/8/-	1,450	0	0	1,870	6	0	420	6	0
	BARCLAY MEMORIAL FUND.										
300	3½% G. Loan No. 170971, 1854-55	72/8/-									
100	3½% G. Loan No. 220763, 1854-55	72/8/-									
100	3½% G. Loan No. 304677, 1900-01	72/8/-	435	0	0	600	0	0	165	0	0
100	3½% G. Loan No. 354795, 1865	72/8/-									
	SIR WILLIAM JONES MEMORIAL FUND.										
1,500	3½% G. Loan, 1854-55 ...	72/8/-	2,175	0	0	3,000	0	0	825	0	0
1,500	3½% G. Loan, 1900-01 ...	72/8/-									
	ANNANDALE MEMORIAL FUND.										
3,000	3½% G. Loan, 1842-43 ...	72/8/-	2,175	0	0	3,000	0	0	825	0	0
	PERMANENT LIBRARY ENDOWMENT FUND.										
5,000	3½% G. Loan No. 230065, 1854-55	...									
2,000	3½% G. Loan No. 231119, 1854-55	...	5,800	0	0	8,000	0	0	2,200	0	0
1,000	3½% G Loan, 1854-55 ...	...									
3,00,200		.....	2,20,051	14	0	2,89,106	3	10	69,054	5	10

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STATEMENT No. 22.

Account (Government Securities). *1928.*

Cr.

	Rs. As. P.	Rs. As. P.
By Balance as per Balance Sheet ..	3,00,200 0 0	2,20,051 14 0
Less Depreciation on Investments re-valued on 31st December, 1928 ..	..	69,054 5 10
TOTAL ..	3,00,200 0 0	2,89,106 3 10

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STATEMENT No. 23.

1928. *(2) Investment Account*

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account	..	3,456 8 8
To deposits of Contributions, during the year	1,007 9 6	
To Deposit of Interest on Loans received for the year	3 14 0	
To Deposit of Advances, returned ..	310 0 0	
		1,321 7 6
To Interest realised for 1927	..	82 11 1
TOTAL	..	4,860 11 3

STATEMENT No. 24.

1928. *(3) Investment Account*

Dr.

	Rs. As. P.	Rs. As. P.
To Balance from last Account ..	..	20,000 0 0
TOTAL	..	20,000 0 0

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STATEMENT No. 23.

(Savings Bank Deposit, Imperial Bank of India). *1928.*

Cr.

	Rs.	As.	P.
By Advances paid out during the year	610	0	0
By Balance as per Balance Sheet	4,250	11	3
TOTAL ..	4,860	11	3

STATEMENT No. 24.

(Fixed Deposit, Imperial Bank of India). *1928.*

Cr.

	Rs.	As.	P.
By Balance as per Balance Sheet	20,000	0	0
TOTAL ..	20,000	0	0

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STATEMENT No. 25.

1928. *Cash*

Dr.

To	Rs.	As.	P.	Rs.	As.	P.
Balance from last Account ..	..			7,989	5	10
Asiatic Society of Bengal	14,331	4	10			
Oriental Publication Fund No. 1 Account ..	10,744	10	0			
Oriental Publication Fund No. 2 Account ..	3,000	0	0			
Sanskrit Manuscripts Fund Account ..	3,600	0	0			
Arabic and Persian Manuscripts Fund Account	5,000	0	0			
Barclay Memorial Fund Account ..	17	6	0			
Servants' Pension Fund Account ..	88	3	3			
Building Fund Account	455	0	0			
Provident Fund Account	1,011	7	6			
Sir William Jones Memorial Fund Account	336	2	0			
Annandale Memorial Fund Account ..	94	10	0			
Permanent Library Endowment Fund Account	846	8	0			
Calcutta Science Congress Prize Fund Account	2,239	1	3			
Publication Fund Account	1,068	8	0			
Fixed Deposit Account (London) ..	1,377	0	0			
Personal Account	36,624	12	9			
Loan Account	310	0	0			
War Bond Account	11,400	0	0			
Savings Bank Deposit Fund Account ..	610	0	0			
				93,154	9	7
TOTAL ..				1,01,143	15	5

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STATEMENT No. 25.

Account. *1928.*

Cr.

By	Rs. As. P.	Rs. As. P.
Asiatic Society of Bengal	49,438 12 9	
Oriental Publication Fund No. 1 Account	12,259 13 0	
Oriental Publication Fund No. 2 Account	3,760 13 0	
Sanskrit Manuscripts Fund Account ..	3,753 8 0	
Arabic and Persian Manuscripts Fund Account	3,839 12 0	
Barclay Memorial Fund Account ..	13 0 0	
Sir William Jones Memorial Fund Account	524 14 0	
Annandale Memorial Fund Account ..	1 2 0	
Permanent Library Endowment Fund Account	745 1 10	
Publication Fund Account	1,377 0 0	
Personal Account	6,304 1 5	
Loan Account	610 0 0	
Savings Bank Deposit Fund Account ..	1,321 7 6	
Investment Account	11,400 0 0	
		95,349 5 6
Balance	..	5,794 9 11
TOTAL ..		1,01,143 15 5

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STATEMENT No. 26.

1928. *Balance*

LIABILITIES.

	Rs.	As.	P.	Rs.	As.	P.
Asiatic Society of Bengal	1,85,413	12	8			
Oriental Publication Fund No. 2 Account	953	7	0			
Sanskrit Manuscripts Fund Account ..	13,761	2	3			
Arabic and Persian Manuscripts Fund Account	1,889	13	3			
Barclay Memorial Fund Account ..	509	6	8			
Servants' Pension Fund Account ..	1,644	9	1			
Building Fund Account ..	11,392	6	6			
Catalogue of Scientific Serial Publication, Calcutta Account	415	0	0			
International Catalogue of Scientific Literature Account	4,424	7	8			
Akbarnama Reprint Account	7,764	10	8			
Provident Fund Account	4,550	11	3			
Sir William Jones Memorial Fund Account	2,175	4	0			
Annandale Memorial Fund Account ..	2,602	3	0			
Permanent Library Endowment Fund Account	5,806	8	8			
Calcutta Science Congress Prize Fund Account	2,239	1	3			
Publication Fund Account	13,731	13	5			
				2,59,274	5	4
TOTAL ..				2,59,274	5	4

We have examined the above Balance Sheet and the appended detailed accounts with the Books and Vouchers presented to us and certify that they are in accordance therewith, and set forth correctly the position of the Society as at 31st December, 1928.

PRICE, WATERHOUSE, PEAT & Co.,
Auditors,
Chartered Accountants.

Calcutta,
January 29th, 1929.

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STATEMENT No. 26.

Sheet. *1928.*

ASSETS.

	Rs. As. P.	Rs. As. P.
Oriental Publication Fund No. 1 Account	314 9 10	
Personal Account	784 3 11	
Loan Account	300 0 0	
Investment Account	2,20,051 14 0	
Savings Bank Deposit Fund Account ..	4,250 11 3	
Fixed Deposit (Calcutta)	20,000 0 0	
Fixed Deposit Account (London) £500-0-0	6,666 10 8	
Current Account (London) £83-7-5 ..	1,111 9 9	
		2,53,479 11 5
Cash Account		5,794 9 11
TOTAL ..		2,59,274 5 4

BAINI PRASHAD,
Honorary Treasurer.

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[APPENDIX IV.]

Abstract Proceedings Council, 1928.

(Rule 48 f.)

ADVERTISING—

Report regarding arrears in payment by the India Publicity Service, Agents, for poster advertising. Consult lawyers as to action to be taken. Press for payment of arrears. Correspondence with firm through lawyers only. Dealings with India Publicity Service to be terminated. Negotiations for new arrangements to be placed in the hands of Mr. J. C. Mitra and the General Secretary with full powers to conclude agreement subject to previous approval of Sir B. L. Mitter.
No. 24. 30-7-28.

Report advertisement situation. Approved.
No. 5. 24-9-28.

ANNUAL MEETING—

Letters from the Private Secretary to H.E. the Governor of Bengal intimating that H.E. will not be able to be present at the Annual Meeting. Record with regret.
No. 10. 30-1-28.

Annual Report. Adopt.
No. 25. 30-1-28.

Annual Meeting. Arrangements approved.
No. 26. 30-1-28.

Letter from the Private Secretary to His Excellency the Governor of Bengal, intimating that H.E. will be present at the Annual Meeting of the Society. Record.
No. 2. 17-12-28.

ASSOCIATE MEMBERS—

Quinquennial re-election, Associate Members. Recommend for re-election Associate Members: Führer, Francke, Hosten, Ivanow and Kamal Krishna Smrititirtha.
No. 9. 17-12-28.

BIBLIOTHECA INDICA—

Recommendation Finance Committee No. 2 of 24-2-28. That the Council do consider anew the whole question of the publication of the Haft-i-Qlim. Accepted by Council.
No. 10. 27-2-28.

Report, General Secretary, of completion of Mr. Ivanow's second (and final) supplement to the Catalogue of Persian MSS. To be sent to press, the General Secretary to be in charge of the work.
No. 4. 26-3-28.

Report on two of the latest issues in the Bibliotheca Indica series:—(1) "Śrīkrishnāvatāralīla" by Sir George Grierson, and (2) "Kui Grammar" by W. W. Winfield. Record.
No. 3. 25-6-28.

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Proposal from Dr. S. K. Chatterji to publish the work entitled Varnaratnakāra (Maithili) in the Bibliotheca Indica. Accept. Work only to be taken up when MS. is completely in the hands of the Secretary.
No. 7. 25-6-28.

Sir George Grierson's opinion on the Kui Grammar published by the Society. Record.
No. 26. 30-7-28.

Progress Report Mr. Ivanow's Catalogue of Arabic MSS. in the Society's collections. Record.
No. 27. 30-7-28.

Report progress of Sir George Grierson's Kashmiri Dictionary. Record.
No. 4. 27-8-28.

Letter from Prof. Caland enquiring whether his English translation of Pancavimsha-Brahmaṇa may be accepted for publication in the Bibliotheca Indica. Accept for publication.
No. 5. 27-8-28.

Reprint Vivāda Ratnakāra, Bibliotheca Indica. Reprint. Editor: Pandit MM. Kamal Krishna Smrititirtha.
No. 13. 27-8-28.

Letters from Sir George Grierson and Prof. Lanman concerning the exterior form of the Śrīkrishnāvatāra-Līla published in the Bibliotheca Indica. Record.
No. 2. 24-9-28.

Proposals for the undertaking of the reprint of old works (out of stock) and the taking up of new works, Bibliotheca Indica. Accept; including Dr. S. K. Chatterji's suggestion.
No. 4. 24-9-28.

Letter of thanks from Prof. W. Caland for the acceptance of his translation of the Pancavimsha Mahabrahmaṇa for publication in the Bibliotheca Indica. Record.
No. 1. 26-11-28.

Opinion from Prof. Caland on the Society's recent publication of the Gṛhastaratnakāra in the Bibliotheca Indica. Record.
No. 2. 26-11-28.

Request from M. Fazlur Rahman Baqi to be allowed to edit "Tazhira Nasr Abadi" in the Bibliotheca Indica. Applicant to be authorised to prepare complete press-ready copy of the MS., against remuneration of half the usual editor's fees, namely As. 8 per calculated printed page.
No. 6. 26-11-28.

BUILDING—

Annual repairs to building. The General Secretary to communicate with Messrs. Martin & Co., for advice, plans and estimates.
No. 14 (a). 27-2-28.

COMMITTEES—

Constitution of Committees for 1928-29 to be constituted as follows:—

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Library Committee.

President.
Treasurer.
General Secretary.
Philological Secretary.
Jt. Philological Secretary.
Biological Secretary.
Physical Science Secretary.
Anthropological Secretary
Medical Secretary.
Library Secretary.
} Ex-Officio.

Sir C. C. Ghose.
Mr. J. H. Lindsay.

Publication Committee.

President.
General Secretary.
Treasurer.
Philological Secretary.
Jt. Philological Secretary.
Biological Secretary.
Physical Science Secretary.
Anthropological Secretary
Medical Secretary.
Library Secretary.
} Ex-Officio.

Sir C. C. Ghose.

Finance Committee.

President.
General Secretary.
Treasurer.
} Ex-Officio.

Sir R. N. Mookerjee.
MM. H. P. Shastri.
Mr. J. C. Mitra.
Mr. A. R. Bery.

No. 7. 27-2-28.

CONDOLENCES—

Letter of condolence to, and reply thereto from, Lady Sinha. Record.
No. 2. 26-3-28.

CONGRATULATIONS AND THANKS—

Letter of thanks from the Toronto University for sending a delegate to represent the Society at its Centenary Celebration. Record.
No. 1. 30-1-28.

Letter of thanks from the Council of the Far Eastern Association of Tropical Medicine. Record.
No. 2. 30-1-28.

Letters of thanks from the members of the Society to whom the Society's congratulations have been conveyed at the occasion of their having received the honour of Knighthood. Record.
No. 3. 30-1-28.

Letter of thanks from Lt.-Col. Sir T. W. Haig for electing him as an Honorary Fellow of the Society. Record.
No. 4. 30-1-28.

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Presentation to the Society of collected works of Goethe and Schiller by Dr. Baini Prashad. Order: The special thanks of the Council to be conveyed to the donor.
No. 7 (a). 30-1-28.

Presentation to the Society of certain documents and portraits by Mr. Jogendra Nath Biswas. Order: Accept with thanks.
No. 7 (b). 30-1-28.

Presentation to the Society of four images from the Rangpur District by Mr. I. B. Sen. Order: Accept with thanks.
No. 7 (c). 30-1-28.

Letter of thanks from the Mining and Geological Institute of India for permitting them the use of the Society's Hall for their Annual Meeting. Record.
No. 1. 27-2-28.

Letter of thanks from Mr. H. E. Stapleton for his election as an Ordinary Fellow. Record.
No. 2. 27-2-28.

On proposal of Dr. Brahmachari, seconded by Sir C. C. Ghose, resolved to place on record the Council's very cordial thanks to Dr. Christie for the way in which he has served the true interests of the Society during the period of his Presidency, and to the outgoing Council for their valued labours.
No. 3. 27-2-28.

Letter of thanks from Sir Malcolm Watson for the award to him of the Sir William Jones Memorial Medal. Record.
No. 1. 26-3-28.

Letter of thanks from Sir Richard Carnac Temple for his election as an Ordinary Fellow. Record.
No. 1. 30-4-28.

Letter of thanks from Dr. Fritz Sarasin for the award to him of the Annandale Memorial Medal. Record and send suitable reply.
No. 2. 30-4-28.

Letter from Col. Sewell, Director, Zoological Survey of India, dated 27-4-28, concerning the MS. drawings of Hamilton-Buchanan. Circular prepared for circulation to Council. Communicate to next Monthly Meeting. Thanks to Col. Sewell.
No. 17 (b). 30-4-28.

Presentation to the Society by Dr. U. N. Brahmachari of a copy of his latest work on "Kala Azar". Letter of thanks to donor.
No. 1. 25-6-28.

Congratulations from the Society to Sir George Grierson on his receiving the distinction of the Order of Merit. Letter of congratulation to Sir George Grierson.
No. 2. 25-6-28.

Legal opinions by Sir B. L. Mitter on certain matters relating to the Society. Letter of thanks to Sir B. L. Mitter.
No. 4. 25-6-28.

Letter of thanks from Sir George Grierson. Record.
No. 2. 30-7-28

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Letter of thanks from the Batavia Society of Arts and Sciences for the congratulations sent by the Society. Record.
No. 3. 30-7-28.

Presentation to the Society by Dr. Fritz Sarasin of a copy of his monograph on New Caledonia. Acknowledgment approved.
No. 4. 30-7-28.

Letter of thanks from Prof. W. Caland for the acceptance of his translation of the Pancavimsha Mahabrahmana for publication in the Bibliotheca Indica. Record.
No. 1. 26-11-28.

Letter of congratulation on behalf of the Society to Sir B. L. Mitter on his new appointment as Law Member, Viceroy's Executive Council. Record.
No. 1. 17-12-28.

COUNCIL—

Signatures signifying formal acceptance of election to the Council for 1928. Record.
No. 3. 27-2-28.

Letter from Dr. W. A. K. Christie resigning his seat on the Council. Record.
No. 5. 25-6-28.

Letter from Col. Knowles resigning his seat on the Council. Record.
No. 15 (b). 25-6-28.

Letter from J. H. Lindsay resigning his seat on the Council. Record.
No. 1. 30-7-28.

Notice of Library Secretary intimating absence from Calcutta for approximately two months. General Secretary to officiate.
No. 1. 24-9-28.

Fixing date for the next Council and Committee Meetings. No Council meeting during October. General Secretary to arrange next Monthly Meeting of the Society, including programme, candidates for membership and papers.
No. 8. 24-9-28.

Date next Committee and Council Meetings. December 17th.
No. 13. 26-11-28.

Informal consideration composition of Council for 1929-30.
After discussion the following list of Candidates for nomination to next year's Council was placed before the meeting for consideration :

President	Dr. U. N. Brahmachari.
Vice-President	Dr. W. A. K. Christie.
,, ...	Sir R. N. Mookerjee.
,, ...	Sir E. H. Pascoe.
,, ...	Sir C. C. Ghose.
General Secretary ..	Mr. Johan van Manen.
Treasurer	Dr. Baini Prashad.
Phil. Secretary ..	MM. H. P. Shastri.
Jt. Phil. Secretary	Dr. M. Hidayat Hosain.
Nat. Hist. Secy. (Biology)	Lt.-Col. R. B. S. Sewell.
,, (Phys. Sci.)	Dr. C. V. Raman.
Anthropological Secy. ..	Rev. P. O. Bodding.
Medical Secretary ..	Lt.-Col. R. Knowles.

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Library Secretary	..	Lt.-Col. N. F. Barwell.
Member of Council	..	Dr. S. K. Chatterji.
,, ..	..	Mr. B. De.
,, ..	..	Mr. H. E. Stapleton.
,, ..	..	Rev. A. W. Young.
,, ..	..	Mr. Justice B. B. Ghose.
,, ..	..	Sir J. C. Coyajee.

Resolved: That the General Secretary do print and circulate to the members of the Council the list of the Council as at present constituted, together with the new list placed before the meeting, and provided with a blank column for additional names; that these lists be returned to the General Secretary within a week of date of issue, that a list be compiled of the candidates finally proposed and be placed before next Council Meeting to be voted upon.

No. 14. 26-11-28.

Council nomination, 1929-30.

The General Secretary reported that 14 Council members had returned the list of candidates circulated, duly signed and unanimously approved without any alternative suggestions. Resolved to accept the list placed before the Council in the November meeting and to order it to be sent out to the Resident Members, as prescribed by Rule 44.

No. 18. 17-12-28.

ELLIOTT PRIZE—

Recommendation of the Trustees, Elliott Prize. Record and accept.

No. 12. 17-12-28.

FELLOWS—

Recommendations election of Fellows, 1927-28. Accept.

No. 17. 30-1-28.

Letter of thanks from Mr. H. E. Stapleton for his election as an Ordinary Fellow. Record.

No. 2. 27-2-28.

Letter of thanks from Sir Richard Carnac Temple for his election as an Ordinary Fellow. Record.

No. 1. 30-4-28.

Recommendation Fellows' meeting of 1-10-28, regarding two amendments to be made in the present Regulations for the Election of Fellows. Accept.

No. 3. 26-11-28.

FINANCE—

Auditors' Report and Statement of Accounts for 1927. Accept all suggestions.

No. 16. 30-1-28.

Minutes Special Finance Committee No. 1 of 18-1-28. The budget for 1928. Recommendation: That the budget as framed be passed. Accepted by Council.

No. 19. 30-1-28.

Finance Committee No. 5 of 25-1-28. The Auditors' Report for 1927. Recommendation: Place before Council. Accepted by Council.

No. 20. 30-1-28.

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Recommendations of the Finance Committee of 25-1-28. Accept.

Resolved to authorise the Treasurer to endorse 3½% Government paper Nos. 231119 and 230787 of 1854-55 for Rs. 2,000 Face Value, to the Imperial Bank of India, Park Street Branch, for safe custody.

No. 20. 30-1-28.

Finance Committee No. 3 of 24-2-28. Consideration of a letter from the Auditors requesting enhancement of their fee from Rs. 250 to Rs. 500. Recommendation: That a reply be sent intimating the Society's inability to accede to the request. Accepted by Council.

No. 10. 27-2-28.

Further request from Messrs. Price, Waterhouse, Peat & Co., for increase of the auditing fee. Letter to be sent on the lines suggested by Sir C. C. Ghose.

No. 5. 26-3-28.

Further correspondence with Messrs. Price, Waterhouse, Peat & Co., with reference to the auditing fee. Write and thank.

No. 7. 30-4-28.

Finance Committee No. 3 (b) of 27-4-28. Further correspondence with Messrs. Price, Waterhouse, Peat & Co., regarding the audit fee. Recommendation: Place before Council. Accepted by Council.

No. 12. 30-4-28.

Circular letter Imperial Bank of India, dated 30-7-28, with regard to New Government Loans.

Resolved that the whole amount rounded off to the nearest amount in full hunderds of rupees of the Rs. 10,000 invested in 5½% Bonds 1928, due for repayment on 15th September, 1928, be converted into investment in the New 4½% Government Loan 1955-60.

No. 25. 30-7-28.

Special Finance Committee No. 1 of 10-12-28. The budget estimates for 1929 were considered and estimates as finally recommended were ordered to be placed before the next ordinary meeting of the Finance Committee for adoption. Council order: Approve.

No. 13. 17-12-28.

Special Finance Committee No. 2 of 10-12-28. Resolved to place before the next Finance Committee for recommendation to Council a recommendation to sell before the end of the current year 4½% G.P. Notes 1955-60 to a face value of Rs. 11,400 to facilitate cash payments during December and during the opening months of next financial year. Council order: Accept.

No. 13. 17-12-28.

Finance Committee No. 5 (d) of 12-12-28. Budget for 1929. Recommendation: Recommend to Council for adoption the budget as drawn up and finally revised.

Resolved to recommend to Council in modification of resolution No. 2 of the Special Finance Committee Meeting of 10th December, that any extra cash required for expenditure during December and January may be taken as an advance from the current account of the Indian Science Congress held by the Society.

The advance to be repaid as funds are received. Accepted by Council.

No. 14. 17-12-28.

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FURNITURE—

Finance Committee No. 4 of 24-2-28. Estimates Russa Engineering Works, Ld., for the Installation of an additional electric fan. Recommendation: That the estimates be accepted. Accepted by Council.
No. 10.
27-2-28.

Finance Committee No. 5 of 24-2-28. Estimates from Choong Sang, Carpenter, for certain items of office furniture. Recommendation: That the estimates be accepted. Accepted by Council.
No. 10.
27-2-28.

GRANTS—

Letter from the President on the subject of grants from the Government of Bengal. The General Secretary to be authorised to forward the drafts as finally revised.
No. 9.
25-6-28.

Letter from the Secretary to the Government of Bengal, Department of Education, conveying sanction of an annual grant of Rs. 3,200 for five years. Record. Acknowledgment approved.
No. 11.
30-7-28.

Correspondence with Government of Bengal, Department of Education, with reference to the annual grant for Oriental Publication Fund No. 2. Approved. Consequent rebookings sanctioned. Printing of Ivanow's Persian Catalogue to be debited to O.P. 2 from O.P. 1; equivalent salary from Persian and Arabic MS. Fund to O.P. 1.
No. 8.
17-12-28.

HONORARY FELLOWS—

Letter of thanks from Lt.-Col. Sir T. W. Haig for his election as an Honorary Fellow of the Society. Record.
No. 4.
30-1-28.

INDIAN SCIENCE CONGRESS—

Report visit to the Society by the members of the 15th Indian Science Congress. Record.
No. 6.
30-1-28.

Finance Committee No. 3 (a) of 23-3-28. Refund loan of Rs. 5,000 to the Indian Science Congress. Recommendation: Refund. Accepted by Council.
No. 9.
26-3-28.

Letter from Col. Sewell suggesting reprint of the Proceedings of the Second Indian Science Congress. General Secretary to be authorised to reprint.
No. 15 (a).
25-6-28.

Letter from the Local Joint-Secretary, 15th Indian Science Congress, regarding the annual award of a prize in connection with the Indian Science Congress. Accept subject to previous approval of Executive Committee, Indian Science Congress.
No. 3.
27-8-28.

Finance Committee No. 4 (a) of 12-12-28. Society's contribution to the Indian Science Congress for the year 1928. Recommendation: In view of cost of reprint, Proceedings, 2nd Session, fix contribution at Rs. 250. Accepted by Council.
No. 14.
17-12-28.

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Disposal of the gift of Rs. 2,213 to the Society by the Calcutta Committee of the Indian Science Congress, 1928. Postpone. Dr. Baini Prashad and Mr. Stapleton to be requested kindly to give notes on the subject for submission to Sir C. C. Ghose.
No. 19 (a). 17-12-28.

INSTITUTIONAL MEMBERSHIP—

Suggestion for the creation of Institutional Membership of the Society.
Order: Adopt. Dr. Christie to make verbal alterations in proposed regulations.
Institutional Membership Regulations as finally revised by Dr. Christie:—

1. *Bonâ fide* literary, scientific and educational institutions, public and official bodies, and libraries shall be eligible for Institutional Membership.
2. Admission shall be determined by the Council, who shall report new admissions to the next Ordinary Monthly Meeting.
3. An Institutional Member shall pay a registration fee of Rs. 50 and an annual fee, in advance, of Rs. 24.
4. An Institutional Member shall be entitled to receive one copy of all numbers of the *Journal and Proceedings* and *Memoirs* published during the period of its membership and to purchase for the Institution publications of the Society at the rates in force for Ordinary Members.
5. Candidates for Institutional Membership shall, when applying for such membership, give an undertaking that the institution will not purchase any of the Society's publications except for its own use and that it will abide by these regulations.
6. Institutional Membership shall lapse through non-payment of the annual fee during the year for which it is due. It may be revived by payment of a further registration fee of Rs. 50.
7. The Council may terminate the Institutional Membership of any institution at its discretion, without compensation.

Order: Adopt.
No. 9. 30-4-28.

First application for the newly created Institutional Membership. Accept application.
No. 14. 30-7-28.

INTELLECTUAL CO-OPERATION—

Memorial from the International Institute of Intellectual Co-operation, Paris, in connection with the production of a directory of scholars and Scientific Institutions in India. Ask for further particulars, especially regarding finance.
No. 13. 30-1-28.

INVITATIONS—

Suggestion from the General Secretary to invite some of the Ruling Princes at present in Calcutta to visit the Society. Approved.
No. 9. 30-1-28.

Invitation from the Royal Batavian Society to send a representative of the Society on the occasion of the celebration of its 150th Anniversary. The General Secretary to endeavour to arrange, and to send a suitable reply.
No. 4. 27-2-28.

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Invitation from the Smithsonian Institute, Washington, in connection with the commemoration meeting of Charles Doolittle. The General Secretary to send a suitable reply.
No. 5. 27-2-28.

Invitation to the Fifth All-India Oriental Conference, Lahore. MM. H. P. Shastri to be invited; if not able to accept, General Secretary to endeavour to make other arrangements.
No. 3. 26-3-28.

Invitation to the Society from the Naturalistic Society of Tartu, Esthonia, to the celebration of its seventy-fifth anniversary. General Secretary to make suitable arrangements.
No. 5. 30-7-28.

Circulars concerning the Folk-lore Society Congress which will be held in London in September, 1928. General Secretary to make suitable arrangements.
No. 6. 30-7-28.

Preliminary notice regarding the Fifth International Botanical Congress, Cambridge, 1930. General Secretary to make suitable arrangements.
No. 7. 30-7-28.

Notice regarding the Centenary Celebration of the Société Linnéenne de Bordeaux, at Bordeaux, France. General Secretary to make suitable arrangements.
No. 8. 30-7-28.

KAMALA LECTURESHIP—

Representation on the Selection Committee, Kamala Lectureship, Calcutta University. The Council's nominee to be MM. Haraprasad Shastri.
No. 9. 27-2-28.

LEASE—

The question of leasing out a portion of the Society's compound. Accept Lease Committee's recommendation with the exception of enhancement of rent, to remain fixed at Rs. 375 monthly. Draft lease to be approved by Sir B. L. Mitter before final execution.
No. 6. 26-3-28.

Proposal General Secretary to recommend to Council to allocate proceeds from Leases to the Permanent Reserve Fund.
That in case any lease proposals are accepted by the Council, the Finance Committee recommends that any income derived from such leases should be inviolably transferred to the Permanent Reserve Fund of the Society and not to be used for current expenditure.
Recommendation: Adopt: Council order: Consideration to be postponed till after the completion of the lease.
No. 9. 21-3-28.

Letter Assessor, Calcutta Corporation, dated 30-7-28, regarding separate plot numbering in connection with a building lease. The General Secretary to be authorised to have the necessary boundary wall erected in order to obtain the separate plot numbering.
No. 29. 30-7-28.

Letter Assessor, Calcutta Municipality, intimating willingness to give separate plot number to the building site, in the south corner of the Society's compound. Approved.
No. 13 (1). 26-9-28.

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LECTURES—

Offer from MM. Haraprasad Shastri received on 28-4-28 to give a General Lecture to the Society on the 18 Purānas. Circular prepared for circulation to Council. Accept and make necessary arrangements.
No. 17 (a). 30-4-28.

Public lectures, winter season 1928-29. General Secretary to arrange.
No. 6. 27-8-28.

Proposed public lecture by Dr. Jacques Stern. Accept. General Secretary to arrange.
No. 19 (b). 27-11-28.

LIBRARY—

Recommendation of the Library Committee No. 3 of 27-2-28. That purchase recommendations in future should be accompanied by a financial statement, showing the budget allotment for the year, payments made, liabilities incurred, and available balance. Accepted by Council.
No. 11. 27-2-28.

Purchase Recommendation Library Committee No. 2 of 26-3-28. That attempts be made to obtain as many as possible of these publications in clean second-hand copies. Accepted by Council.
No. 10. 26-3-28.

Progress report binding and repairing of manuscripts in the Arabic and Persian Library of the Society. Record.
No. 5. 30-4-28.

Recommendation Library Committee No. 1 of 28-5-28. Purchases to be postponed for the present. The Honorary Treasurer and Library Secretary kindly to report on still outstanding commitments for books ordered, together with a general note on policy. Confirmed by Council.
No. 3. 28-5-28.

Library Committee of 25-6-28. Encyclopædic Dictionary of Buddhism (Hobogirin). Recommendation : Subscribe. Accepted by Council.
No. 12. 25-6-28.

LIBRARY CATALOGUE—

Library Committee No. 1 of 26-3-28. Letter from the Library Secretary regarding the Library Catalogue. Recommended that the General Secretary be instructed to do the best he can in the circumstances. Accepted by Council.
No. 10. 26-3-28.

LIBRARY ENDOWMENT FUND—

Finance Committee No. 3 (2) of 25-1-28. Purchase of Rs. 2,000 Face Value of 3½% G. P. Notes of 1854-55 Nos. 231119, 230787, for the Permanent Library Endowment Fund of the Society.

Recommendation : Resolved to recommend to Council to authorise the Treasurer to endorse 3½% Government paper Nos. 231119 and 230787 of 1854-55 for Rs. 2,000 Face Value, to the Imperial Bank of India, Park Street Branch, for safe custody. Accepted by Council.
No. 20. 30-1-28.

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Library Committee No. 2 of 27-8-28. Library endowment appeal. Recommendation: Issue appeal to new members. Accepted by Council.
No. 10. 27-8-28.

Finance Committee No. 4 (c) of 12-12-28. Letter to the Imperial Bank requesting purchase of Rs. 1,000 Face value of 3½% G. P. Notes of 1854-55 for the Permanent Library Endowment Fund. Recommendation: Approved. Accepted by Council.
No. 14. 17-12-28.

Letter from Dr. U. N. Brahmachari offering Rs. 600 on behalf of Mrs. Brahmachari to the Library Endowment Fund of the Society. A hearty vote of thanks of Council to be sent to the donor.
No. 3. 17-12-28.

LOAN OF MANUSCRIPTS—

Report return in good order of the manuscripts Diwan-i-Haydar and Diwan-i-Lesani by Mr. Khuda Bukhsh. Record.
No. 8. 30-1-28.

Dr. Tucci's application for the loan of a Sanskrit MS. and a Tibetan block-print. Grant loan on usual conditions.
No. 28. 30-7-28.

Request Prof. Hidayat Hosain to be permitted the use at the Calcutta Madrassah of MSS. and other materials necessary for his editing work on the Maathir-i-Rahimi. Grant loans under usual conditions.
No. 14. 27-8-28.

MANUSCRIPTS—

Recommendation Finance Committee, No. 3 of 19-9-28. Letter from Mr. Ivanow regarding Muhammadan MSS. for sale at Shiraz.
Resolved to recommend that Rs. 500 be put at his disposal for purchase, and notification concerning this be wired in anticipation of sanction. Council order: Adopt. Treasurer and General Secretary to have discretionary power to place a further sum of Rs. 500 at Mr. Ivanow's disposal for the purchase of MSS.
No. 9. 24-9-28.

MEMBERSHIP—

Letters from their Highnesses the Maharaja and Maharani of Sikkhim intimating their desire to take up Life-Membership in the Society. Record.
No. 5. 30-1-28.

Finance Committee No. 3 (3) of 25-1-28. List of members who are in arrears with subscriptions for four or more quarters. Recommendation: Apply rules. Honorary Treasurer to write to those he knows personally. Accepted by Council.
No. 20. 30-1-28.

Statement regarding composition for Life Membership from 1925 to 1928. Record.
No. 3. 30-4-28.

Report increase in Society's Membership. Record.
No. 4. 30-4-28.

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Finance Committee No. 3 (a) of 27-4-28. List of members who are in arrears wih subscriptions for four or more quarters. Recommendation: Apply Rules. Accepted by Council.
No. 12. 30-4-28.

List of members in arrears with subscriptions. Apply Rules, except in the cases of Mr. Khuda Buksh and Mr. Narendra Nath Raye, concerning whom the President will kindly exercise his good offices and report to next Council.
No. 16. 30-4-28.

Notice of intention of Maharaja of Kasimbazar to apply for membership. Application if received in time, to be accepted for ballot in the next Monthly Meeting and incorporation in meeting programme.
No. 17 (c). 30-4-28.

Report increase in Society's Life Membership. Record.
No. 12. 30-7-28.

Report applications for membership for the current year. Record.
No. 13. 30-7-28.

Finance Committee No. 3 of 25-7-28. List of members in arrears with subscriptions. Recommendation: Apply Rules. Accepted by Council.
No. 17. 30-7-28.

Letter of Resignation from Mr. Khuda Bukhsh. Record.
No. 15. 27-8-28.

Report that Lord Sinha of Raipur has taken up his election. Record.
No. 15 (c). 26-11-28.

Finance Committee No. 4 (d) of 12-12-28. List of arrears of members' subscriptions written off during year on account of deaths, resignations, Rule 38, etc. Recommendation: write off. Accepted by Council.
No. 14. 17-12-28.

MEMORIALS—

Recommendations of the Medal Committees. Accept.
No. 18. 30-1-28.

Letter of thanks from Sir Malcolm Watson for the award to him of the Sir William Jones Memorial Medal. Record.
No. 1. 26-3-28.

Letter of thanks from Dr. Fritz Sarasin for the award to him of the Annandale Memorial Medal. Record and send suitable reply.
No. 2. 30-4-28.

Report on the Sir William Jones Memorial Medal Fund. Alloy to be used to a value within the available income. Vote of thanks to Dr. Brahmachari for his additional contribution to the Fund.
No. 8. 30-4-28.

Letter from the Local Joint-Secretary 15th Indian Science Congress, regarding the Annual award of a prize in connection with the Indian Science Congress. Accept subject to previous approval of Executive Committee, Indian Science Congress.
No. 3. 27-8-28.

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Letter from the Brühl Farewell Committee offering a sum of Rs. 1,000 in 3½% G. P. Notes for the institution of a Brühl Memorial Medal to be administered by the Society. Accept on condition that the Society be free to frame regulations regarding the award; that the legend on the medal be approved by the Society; that the award be made triennially.

No. 6. 24-8-28.

Further correspondence with the Brühl Memorial Committee. Accept.

No. 4. 26-11-28.

Sir William Jones Memorial Medal. Letter from the President (Circular No. 174). Appointment of Advisory Board for the current year, and fixing date for the Board Meeting. The award to be made biennially; the regulations to be amended accordingly and the amendments to be placed before the next Monthly Meeting in conformity with the Rules. Size and metal of the medal to remain the same.

The Board for the year to consist of the President, the Philological and Jt. Philological Secretaries, Dr. Bodding and Mr. Van Manen.

No. 5. 26-11-28.

Letter to the President from Dr. S. C. Law offering Rs. 1,000 for the institution of an annual gold medal award to be administered by the Society. Hold over.

No. 5. 17-12-28.

Recommendation Sir William Jones Memorial Medal Advisory Board regarding the award for 1928. Order: Accept.

No. 11 (a). 17-12-28.

Recommendation Sir William Jones Memorial Medal Advisory Board regarding certain amendments to be made in the present Regulations for the award of the medal. Accept; same amendments to be made in the Regulations for the other awards.

No. 11 (b). 17-12-28.

MISCELLANEOUS—

Letter from the Secretary, Bengal Legislative Council, with reference to the two Calcutta University Bills introduced by Messrs. M. N. Roy and P. N. Banerjee. Appoint a Committee of Dr. Brahmachari, Dr. Chatterji, Dr. Hidayat Hosain, Col. Sewell, Col. Barwell and Mr. Van Manen to draw up a report. Their report to be circulated not later than the 13th of February to the Council for sanction to forward it to the Government. The first Committee meeting to be held on February 7th, at 5 p.m.

No. 12. 30-1-28.

Letter from Dr. S. L. Hora with reference to certain remarks made by Prof. S. R. Bose. The Council reiterates its confidence in Dr. Hora.

No. 14. 30-1-28.

Report on the proposed Calcutta University Bills. Record.

On proposal of Sir C. C. Ghose, seconded by Dr. B. Prashad, resolved to place on record the Council's appreciation of the Committee's valuable labour.

No. 6. 27-2-28.

Letter from the President to the General Secretary, dated 29-4-28, requesting the latter to circulate to Council a complaint against him by Dr. Das Gupta, and intimation that a file has been prepared for immediate circulation.

On a proposal of Sir C. C. Ghose the Council resolved to take cognizance of the matter at once.

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The President made a statement.

The Council after full consideration of the correspondence, on a proposal of Sir C. C. Ghose, seconded by Dr. Baini Prashad, resolved *nem. con.*, as follows:—

(1) That the Council endorses the action of the General Secretary in respect of enforcing the rules regarding the lending of the MSS.

(2) That the Council is further of opinion that the rules regarding the lending of MSS. are incapable of relaxation to any one.

(3) That as to the question of rudeness the Council sees no reason to take any action.

No. 17. 30-4-28.

Certain old documents in connection with the foundation of the Calcutta School of Tropical Medicine. Record.

No. 15. 30-7-28.

Circulars from the Government of India regarding the free distribution of Government of India Publications. To be referred to a Committee consisting of Messrs. Stapleton, Barwell and Sewell to make any recommendation and to draft a memorial on the subject to the Government, with a request to the Committee to treat the matter as urgent.

No. 7. 17-12-28.

NUMISMATICS—

The President made a statement regarding the coin collections of the Society and his suggestion was approved that the good offices might be accepted of Mr. H. R. Nevill to examine and report on the coins at present in the Society's premises, involving their despatch for the purpose to Mr. Nevill during the current year.

No. 27. 30-1-28.

PAINTINGS—

Report on damage to Domenicheno's painting. Repair and secure.

No. 6. 30-4-28.

PUBLICATIONS—

Publication Committee No. 2 of 30-1-28. Proposal from Mr. I. H. Burkill regarding "The materials for a Flora of the Malay Peninsula." Recommendation: Accept the President's recommendation. Accepted by Council.

No. 22. 30-1-28.

Suggestions from the Honorary Treasurer regarding the bulk and price of the Society's Journal. A committee to enquire and to report to Council, consisting of Messrs. Christie, Stapleton, the Treasurer and General Secretary.

No. 7. 26-3-28.

Publication Committee No. 1 of 26-3-28. Paper by H. Hosten on "Letters of Fr. Jerome Xavier (Lahore, 1598) and of Fr. Manoel Pinheiro (Lahore, 1599). Recommendation: Read and Journal. Offensive passages to be retained in Latin. Editorial note dissociating the Society from sectarian sentiments expressed in letters. Accepted by Council.

No. 11. 26-3-28.

Recommendation of the Journal Price-Revision Committee No. 1 of 10-4-28. That the notice on p. 3 of the cover of the Journal be amended as follows:

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Instead of "The standard measure for the annual volume is 800 to 960 pages," etc., read :

"The size of a volume is about 800 pages," etc.

Accepted by Council.

No. 11. 30-4-28.

Recommendation of the Journal Price-Revision Committee No. 2 of 10-4-28. That the Prices of Journal and Memoirs remain unchanged. Accepted by Council.

No. 11. 30-4-28.

Letter from Dr. S. K. Chatterji. Resolved: That the Council approve of the idea of having a memorial volume of the Society's publications commemorating the Shastri's life-long work but defer action till papers are received. The Secretary to be authorised to invite scholars to contribute. No contributions after 30th June, 1929, to be received.

No. 8. 25-6-28.

Letter from MM. H. P. Shastri suggesting that advertisements should be admitted in the "Journal and Proceedings" of the Society. General Secretary to investigate and to report.

No. 15 (c). 25-6-28.

Letter from the Under-Secretary to the Government of Assam, Transferred Departments, on the subject of historical and antiquarian research in Assam. Acknowledge, offering support and co-operation.

No. 10. 30-7-28.

Statement by the General Secretary on the question of accepting advertisements in the Society's Journal. General Secretary to communicate with Publicity Agencies to invite offer and proposals and to place informations obtained before Council.

No. 22. 30-7-28.

Notice in Heffer's catalogue No. 311 regarding a complete bound set of the Society's Journal from 1832 to 1926. Record.

No. 2. 27-8-28.

Publication Committee No. 7 of 27-8-28. Correspondence from Fr. H. Hosten regarding his paper on Letter of Fr. Jerome Xavier and of Fr. Manoel Pinheiro. Recommendation : Col. Barwell to draft reply on following lines : The Council after careful consideration of the letter does not find any reason to change its previous decision. It is further to be observed that the decision was not the opinion of the referee but the considered opinion of the Council. The Council is willing to forego its stipulation that attention be drawn in a footnote that the documents reproduced in the article embody opinions of ancient writers. Accepted by Council.

No. 1b. 27-8-28.

Letter from Prof. Foucher concerning the publication of iconographic miniatures in A.S.B. MS. A. 15 and Cambridge MS. Add. 1643. Proposals accepted on basis of plan outlined in letter. Publication in Memoirs. Typographical, technical and other details, print number, etc., to be arranged by the General Secretary with Prof. Foucher.

No. 16. 27-8-28.

Reviews of two of the Society's recent publications. Record.

No. 4. 17-12-28.

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Proposal from Dr. J. H. Hutton in connection with the publication of the Assam Government's Anthropological Monographs. Accept.
No. 6. 17-12-28.

REPRESENTATION—

Representation of the Society at the International Congress of Orientalists at Oxford. Col. Phillot, Sir Denison Ross, Sir Wolseley Haig, Prof. Vogel and Sir George Grierson to be written to and to be asked mutually to arrange.
No. 11. 30-11-28.

REQUESTS—

Letter from Bombay Branch, Royal Asiatic Society, requesting supply of certain old number of the Bibliotheca Indica. The General Secretary to have discretion to arrange supply, if needed, in exchange for missing publications of the Bombay Branch in the A.S.B.'s library.
No. 14 (b). 27-2-28.

Request from Rai Bahadur Lala Sita Ram for permission to reprint and re-edit the article "Ayodhya Mahatmya" from the Society's Journal. Grant permission.
No. 8 (a). 28-5-28.

Letter from Mr. E. O. Shebbeare enquiring whether permission could be given for holding occasional Committee Meetings of the "Mountain Club" in any of the rooms of the Society. Grant permission. The General Secretary to arrange details.
No. 8 (b). 28-5-28.

Request from the "Chemistry House," Paris, for presentation of the Society's publications to its Library. Present papers relating to Chemistry.
No. 9. 30-7-28.

Request for the use of the Society's hall by the Mining and Geological Institute of India. Arrangements approved.
No. 1. 27-8-28.

Request from Prof. Hidayat Hosain to use at the Calcutta Madrasah MSS. and other materials necessary for his editing work on the Maathir-i-Rahimi. Grant loans under usual conditions.
No. 14. 27-8-28.

Request from the Convenor, Fifth All-India Oriental Conference, Lahore, (November, 1928) for the loan of MSS. to the Exhibition Committee of the Conference. Express regrets inability to comply.
No. 3. 24-9-28.

Request from M. Fazlur Rahman Baqi to be allowed to edit "Tazkhira Nasr Abadi" in the Bibliotheca Indica. Applicant to be authorised to prepare complete press-ready copy of the MS., against remuneration of half of the usual editor's fees, namely as. 8 per calculated printed page.
No. 6. 26-11-28.

Loan of Hall to the Mining and Geological Institute of India for their Annual Meeting on Friday, 18th January, 1929. Action approved.
No. 15 (a). 26-11-28.

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SECTIONS—

Letters enquiring whether the Society could arrange for Sections of Psychology and Agriculture. Give all practical facilities in an informal manner avoiding terms of Section and Sectional Secretary. The question of instituting formal sections to be brought up anew after a year.
No. 23. 30-7-28.

STAFF—

Finance Committee No. 3 (1) of 25-1-28. Increment, Staff Salaries. Recommendation: Postpone. Invite Library Secretary and Joint Philological Secretary to meet the Finance Committee on Monday 30th January, at 4-45 P.M. Accepted by Council.
No. 20. 30-1-28.

Finance Committee No. 3 (4) of 25-1-28. Application from Maulavi Shah Moinuddin Ahmad requesting a loan of Rs. 150 from the Provident Fund Account. Recommendation: Lend and recover in 10 instalments, interest 3½ %. Accepted by Council.
No. 20. 30-1-28.

Finance Committee No. 6 of 24-2-28. Consideration Annual Increments, Staff Salaries. Recommendation: That increments be sanctioned as per schedule approved. Further recommended that in future increments be given from the 1st March with the first payment on the 1st April. Accepted by Council, with the exception of the recommendation to change the initial date of annual increments from 1st January to 1st March.
No. 10. 27-2-28.

Finance Committee No. 7 of 24-2-28. Petition Cashier for loan from the Provident Fund. Recommendation: That the petition be granted, subject to the approval of the Council as per Provident Fund Regulations. Accepted by Council.
No. 10. 27-2-28.

Finance Committee No. 8 of 24-2-28. Petition Typist, N. Gupta for increment of Salary. Recommendation: that the petition be declined. Accepted by Council.
No. 10. 27-2-28.

Finance Committee No. 9 of 24-2-28. Petition Bearer, Sukdeo Ram. Recommendation: That the petition be declined, as contrary to wages schedule. Accepted by Council.
No. 10. 27-2-28.

Application for leave from Mr. Ivanow. Four months leave on full pay. No bonus.
No. 1. 28-5-28.

The question of leave Mohurrum festival. Order: Only Government holidays to be granted to staff.
No. 15 (b). 25-6-28.

Finance Committee No. 4 (1) of 20-11-28. Application from Duftries to be supplied with cold weather clothing. Recommendation: Reject. Accepted by Council.
No. 9. 26-11-28.

Finance Committee No. 4 (b) of 12-12-28. Society's contribution to the staff Provident Fund for the year, 1928. Recommendation: Pay. Accepted by Council.
No. 14. 17-12-28.

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Finance Committee No. 4 (c) of 12-12-28. Request from Cashier for a loan of Rs. 300. Recommendation: Grant, to be recovered in six instalments. Accepted by Council.
No. 14. 17-12-28.

VISITS—

Report visit to the Society by the members of the 15th Indian Science Congress. Record.
No. 6. 30-1-28.

The General Secretary reported the visit to the Society of Professor H. Lüders, Berlin, Permanent Secretary of the Prussian Academy of Sciences. Record.
No. 13. 26-3-28.

Announcement of visit to the Society by the Education Committee of the Simon Commission on November 27th. Record.
No. 15 (b). 26-11-28.

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List of
Patrons,
Officers, Council Members, Members,
Fellows and Medallists
of the
Asiatic Society of Bengal,

On the 31st December, 1928.

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PATRONS OF THE ASIATIC SOCIETY OF BENGAL.

1926	..	**H. E. Baron Irwin, of Kirby-under-Dale, G.M.S.I., G.M.I.E., Viceroy and Governor-General of India.**
1927	..	**H. E. Colonel Sir Francis Stanley Jackson, P.C., G.C.I.E., Governor of Bengal.**

1910–1916	..	Lord Hardinge of Penshurst, K.G., P.C., G.C.B., G.C.M.G., G.C.S.I., G.C.I.E., K.C.M.G., G.C.V.O., K.C.V.O., C.B., C.V.O., I.S.O.
1916–1921	..	Lord Chelmsford, P.C., K.C.M.G., G.C.M.G., G.C.S.I., G.C.I.E., G.B.E.
1917–1922	..	Marquess of Zetland, P.C., G.C.S.I., G.C.I.E.
1921–1926	..	Earl of Reading, G.C.B., P.C., G.C.V.O., K.C.V.O., G.B.E.
1922–1927	..	Earl of Lytton, P.C., G.C.I.E.

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OFFICERS AND MEMBERS OF COUNCIL OF THE ASIATIC SOCIETY OF BENGAL DURING THE YEAR 1928.

Elections Annual Meeting.

President.

Rai Upendra Nath Brahmachari, Bahadur, M.D., M.A., Ph.D., F.A.S.B.

Vice-Presidents

W. A. K. Christie, Esq., B.Sc., Ph.D., M.Inst.M.M., F.A.S.B.
Sir R. N. Mookerjee, K.C.I.E., K.C.V.O.
Sir Devaprasad Sarvadhikary, Kt., C.I.E., C.B.E., M.A., L.L.D.
Sir E. H. Pascoe, Kt., M.A., Sc.D., D.Sc., F.G.S., F.A.S.B.

Secretaries and Treasurer.

General Secretary :—Johan van Manen, Esq., F.A.S.B.
Treasurer :—Baini Prashad, Esq., D.Sc., F.R.S.E., F.A.S.B.
Philological Secretary :—Mahāmahopādhyāya Haraprasad Shāstrī, C.I.E., M.A., D.Litt., F.A.S.B.
Joint Philological Secretary :—Shamsu'l 'Ulamā Mawlawī M. Hidāyat Hosain, Khan Bahadur, Ph.D., F.A.S.B.
Natural History Secretaries. { Biology :—Lt.-Col. R. B. S. Sewell, M.A., M.R.C.S., L.R.C.P., F.L.S., F.Z.S., I.M.S., F.A.S.B. / Physical Science :—C. V. Raman, Esq., M.A., D.Sc., F.R.S., F.A.S.B.
Anthropological Secretary :—Rev. P. O. Bodding, M.A. (Christ.), F.A.S.B.
Medical Secretary :—Lt.-Col. R. Knowles, B.A., M.R.C.S., L.R.C.P., I.M.S., F.A.S.B.
Library Secretary :—Lt.-Col. N. F. Barwell, M.C., M.A., Barrister-at-law.

Other Members of Council.

Mr. Justice C. C. Ghose, Kt., Barrister-at-Law.
Sir B. L. Mitter, Kt., M.A., B.L., Barrister-at-Law.
Suniti Kumar Chatterji, M.A., D.Lit. (London).
J. H. Lindsay, Esq., I.C.S., M.A., J.P.
B. De., Esq., M.A., I.C.S. (retired).
H. E. Stapleton, Esq., M.A., B.Sc., I.E.S., F.A.S.B.

APPOINTMENTS, TRANSFERS, ETC., DURING THE YEAR.

Mr. J. H. Lindsay, resigned in July.
Dr. W. A. K. Christie (Vice-President), resigned in June.
Col. R. Knowles (Medical Secretary), resigned in June.
Sir E. H. Pascoe (Vice-President), absent from June to December.
Sir C. C. Ghose, absent for two months at the close of the year.
Mr. B. De, absent during October.
Sir B. L. Mitter, absent from December.
Mr. Johan van Manen (Acting Library Secretary) in October and November, *vice* Col. Barwell, absent.
Mr. Johan van Manen (Acting Treasurer) from 2nd to 13th August, from 12th to 26th October, and from 6th November to 12th December, *vice* Dr. Baini Prashad, absent.

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OFFICERS AND MEMBERS OF COUNCIL OF THE ASIATIC SOCIETY OF BENGAL ELECTED FOR THE YEAR 1929.

President.

Rai Upendra Nath Brahmachari, Bahadur, M.D , M.A., Ph.D., F.A.S.B.

Vice-Presidents.

W. A. K. Christie, Esq., B.Sc., Ph.D., M.Inst.M.M., F.A.S.B.
Sir R. N. Mookerjee, K.C.I.E., K.C.V.O.
Sir E. H. Pascoe, Kt., M.A., Sc.D., D.Sc., F.G.S., F.A S.B.
Mr. Justice C. C. Ghose, Kt., Barrister-at-Law.

Secretaries and Treasurer.

General Secretary :—Johan van Manen, Esq., F.A.S.B.
Treasurer :—Baini Prashad, Esq., D.Sc., F.R.S.E., F.A.S.B.
Philological Secretary :—Mahāmahopādhyāya Haraprasad Shāstrī, C.I.E., M.A., D.Litt., F.A.S.B.
Joint Philological Secretary :—Shamsu'l 'Ulamā Mawlawī M. Hidāyat Hosain, Khan Bahadur, Ph.D., F.A.S.B.
Natural History Secretaries.
- Biology :—Lt.-Col. R. B. S. Sewell, M.A., M.R.C.S., L.R.C.P., F.L.S., F.Z.S., I.M.S., F.A.S.B.
- Physical Science :—C. V. Raman, Esq , M.A., D.Sc., F.R.S., F.A.S.B.

Anthropological Secretary :—Rev. P. O. Bodding, M.A. (Christ.), F.A.S.B.
Medical Secretary :—Lt.-Col. R. Knowles, B.A., M.R.C.S., L.R.C.P., I.M.S., F.A.S.B.
Library Secretary :—Lt.-Col. N. F. Barwell, M.C., M.A., Barrister-at-law.

Other Members of Council.

Suniti Kumar Chatterji, M.A., D.Lit. (London).
B. De., Esq., M.A., I.C.S. (retired).
H. E. Stapleton, Esq., M.A., B.Sc., I.E.S., F.A.S.B.
Rev. A. Willifer Young.
Mr. Justice B. B. Ghosh, M.A., B.L.
Sir J. C. Coyajee, Kt., B.A. (Cantab.), LL.B., I.E.S.

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ORDINARY MEMBERS.

R=Resident. N=Non-Resident. F=Foreign. A=Absent. L=Life.

An Asterisk is prefixed to names of Ordinary Fellows of the Society.

Date of Election.		
6-5-25	R	**Abbasi,** MOHAMMAD AMIN, *Maulavi, Assistant Superintendent.* Hooghli Madrassah, Hooghli.
5-4-22	R	**Abdul Ali,** ABUL FAIZ MUHAMMAD, M.A., M.R.A.S., F.R.S.L., F.R.G.S., F.R.H.S. 3, Turner Street, Calcutta.
7-3-27	R	**Abdul Kadir,** A. F. M., M.A. (ALLAHABAD), *Maulvie Fazil (Punjab), Madrassah Final (Calcutta), Professor.* Islamia College, Wellesley Street, Calcutta.
3-3-09	R	**Abdul Latif,** SYED, KHAN BAHADUR, B.A., B.L., *Additional Chief Presidency Magistrate, Calcutta.* 11/1, Ahiripukur 2nd Lane, Ballygunge, Calcutta.
2-11-25	N	**Acharya,** PARAMANANDA, B.SC., *Archæological Scholar* Mayurbhanj State, Baripada.
2-3-21	R	**Acton,** HUGH WILLIAM, M.R.C.S., L.R.C.P., LT.-COL., I.M.S. School of Tropical Medicine and Hygiene, Central Avenue, Calcutta.
7-12-25	N	**Afzal,** SYED MOHAMAD, KHAN BAHADUR, *Offg. Civil Surgeon, Bihar and Orissa Medical Service.* Civil Surgeon, Daltonganj.
2-3-21	R	**Agharkar,** SHANKAR PURUSHOTTAM, M.A., PH.D., F.L.S., *Professor of Botany, University College of Science.* 35 Ballygunge Circular Road, Calcutta.
6-6-17	N	**Aiyangar,** K. V. RANGASWAMI, RAO BAHADUR, M.A. *Director of Public Instruction, Travancore.* Trivandrum, Travancore.
6-12-26	N	**Aiyangar,** S. KRISHNASWAMI, M.A., PH.D., M.R.A.S., F.R. HIST.S., *Professor, University of Madras.* "Srijayavasam," 1, East Mada Street, Mylapore, Madras, S.
1-12-20	N	**Akbar Khan,** THE HON'BLE NAWAB MAJOR MOHAMMED, C.I.E., I.A., *Khan of Hoti.* Hoti. N.-W.F.P.
4-4-23	R	**Alker,** A., *Merchant.* 4, Bankshall Street, Calcutta.
3-7-12	N	**Andrews,** EGBERT ARTHUR, B.A. Tocklai Experimental Station, Cinnamara, Jorhat, Assam.
5-11-24	R	**Asaduzzaman,** KHAN BAHADUR. 42, Beniapukur Road, Calcutta.
6-7-04	N	**Aulad Hasan,** SAYID, KHAN BAHADUR. Rajar Deori, Dacca.
4-4-17	N	**Awati,** P. R., M.A., *Professor of Zoology.* Royal Institute of Science, Bombay.
3-3-14	L	**Bacot,** J. Boulevard Saint-Antoine, 61, Versailles, Seine-et-Oise.
1-11-26	R	**Bagchi,** PROBODH CHANDRA, DR.-ES-LETTRES (PARIS),

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Date of Election.		
		Member of the A. S. of Paris; Lecturer, Calcutta University. P.253, Sahanagore Road, Kalighat, Calcutta.
1-3-26	R	**Bagnall,** JOHN FREDERICK, *Consulting Engineer.* 6, Wood Street, Calcutta.
2-4-24	N	**Bahl,** K. N., *Professor of Zoology, Lucknow University.* Badshabagh, Lucknow.
5-11-24	N	**Baidil,** A. MANNAN, *Assistant Superintendent, Dormitory.* Patna College, Bankipur.
7-3-27	N	**Bake,** A. A., *Doctorandus Or. Lit.* P.O. Santiniketan.
2-4-19	R	**Bal,** SURENDRA NATH, M.SC., F.L.S., *Curator, Industrial Section, Indian Museum.* 1, Sudder Street, Calcutta.
1-4-25	R	**Banerjee,** ABHAYA CHARAN, M.A., *Deputy Chief Engineer, Telegraphs.* 29A, Ballygunge Circular Road, Calcutta.
7-1-25	R	**Banerjee,** M. N., C.I.E., B.A., M.R.C.S., L.S.A., *Ex-Principal, Carmichael Medical College; Member of the Syndicate, Calcutta University.* 32, Theatre Road, Calcutta.
6-2-18	R	**Banerjee,** NARENDRA NATH, M.I.P.O.E.E., A.M.I.E., *Divisional Engineer, Telegraphs.* 42/1, Ritchie Road, Ballygunge, Calcutta.
5-4-22	N	**Banerjee,** SASADHAR, B.A., B.ED., *Head Master, Gait H. E. School.* Aurangabad, Gaya.
6-12-26	R	**Banerjee,** S. N., *Barrister-at-Law,* P-307, New Circular Road, Calcutta.
2-4-28	R	**Banerjee,** SRIKUMAR, *Professor of English, Presidency College.* P-72, Saheb Bagan, P.O. Kalighat, Calcutta.
1-3-26	R	**Banerjee,** WOOMESH CHANDRA, *Colliery Proprietor and Merchant.* 7, Swallow Lane, Calcutta.
5-7-26	R	**Banerji,** S. K., PH.D., *Lecturer in Indian History.* University of Lucknow, Lucknow.
1-3-05	R	**Banerji,** MURALIDHAR. Sanskrit College, Calcutta.
2-7-19	R	**Banerji,** PRAMATHANATH, M.A., B.L., *Vakil, High Court.* 9, Mullick Lane, Bhowanipur, Calcutta.
2-7-07	N	**Banerji,** RAKHAL DAS, M.A. Hindu University, Benares.
5-3-24	R	**Bannerjee,** P. N., M.A. (CANTAB.), A.M.I.E., F.C.U., *Civil Engineer.* 6 & 7, Clive Street, Calcutta.
1-2-26	R	**Baptist,** A. E., M.B.E., MAJOR, I.M.D., *Assistant Director.* School of Tropical Medicine, Central Avenue, Calcutta.
6-5-25	R	**Baral,** GOKUL CHANDRA, *Zemindar, Municipal Councillor and Honorary Presidency Magistrate.* 3, Hidaram Banerjee's Lane, Calcutta.
7-2-23	A	**Barber,** CECIL THOMAS, *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
1-11-26	N	**Barhut,** THAKUR KISHORESINGH JI, *State Historian of Patiala Govt.* History and Research Department, Patiala
4-5-21	A	**Barnardo,** F. A. F., C.B.E., C.I.E., M.D., F.R.C.S., F.R.C.E., LT.-COL., I.M.S. Civil Surgeon, Hughli.
7-12-21	R	**Barua,** B. M., M.A., D.LITT., *Lecturer, Calcutta University.* Chandernagore, E. I. Ry.
3-12-23	R	**Barwell,** N. F., Lt.-Col. (retd.), M C., M.A., *Bar.-at-Law.* Bishop's House, 51, Chowringhee, Calcutta (*and*) Aylmerton House, Aylmerton, Norfolk, England.
7-5-28	R	**Basak,** SARAT CHANDRA, *Advocate, High Court.* 13, Russa Road (North), Calcutta.
3-12-24	R	**Basu,** JATINDRA NATH, M.A., M.L.C., *Solicitor.* 14, Baloram Ghose Street, Calcutta.
1-3-26	R	**Basu,** NARENDRA KUMAR, *Advocate, High Court.* 12, Ashu Biswas Road, Bhowanipore, Calcutta.

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2-1-28	R	**Basu,** Narendra Mohun, M.A., *Professor of Physiology.* Presidency College, Calcutta.
7-5-28	R	**Basu,** Narendranath, L.M.S., *Professor of Obstetrics and Gynaecology, Carmichael Medical College.* 7, Raja Bagan Street, Calcutta.
6-2-28	R	**Basu,** Sudhir Kumar, B.A. 24, Tarak Chatterjee's Lane, Calcutta.
4-6-26	A	**Bathgate,** Jean Bertram (Mrs.). Jealgora, Dist. Manbhoom.
6-5-25	N	**Batra,** Hargobind Lal, M.C., Major, I.M.S. Civil Surgeon, Jorhat, Assam.
7-7-09	N	**Bazaz,** Rangnath Khemraj, *Proprietor, Shri Venkateshwar Press.* 7th Khetwadi, Bombay No. 4.
5-3-28	R	**Bealey,** Margaret Isabella (Miss), L.L.A. St. Th., *Trained Teacher, Head of the Diocesan House for Church Workers.* St. Monica's Home, 167, Lower Circular Road, Calcutta.
3-7-95	L	**Beatson-Bell,** Rev. Sir Nicholas Dodd, K.C.S.I., K.C.I.E. Edgeclisse, St. Andrews, Scotland.
2-1-26	F	**Becker,** John Neill, *Mercantile Assistant.* c/o Messrs. Fraser Neabe, Ld., Singapore, S.S.
7-4-15	N	**Belvalkar,** Sripad Krishna, M.A., Ph.D., *Professor of Sanskrit.* Deccan College, Poona.
4-3-25	R	**Benthall,** E. C., *Merchant.* 37, Ballygunge Park, Calcutta.
7-4-09	R	***Bentley,** Charles A., M.B., D.P.H., D. T. M. & H., F.A.S.B. Department of Public Health, Writers' Buildings, Calcutta.
4-6-28	N	**Bhadra,** Satyendra Nath, Rai Bahadur, M.A., *Principal.* Jagannath Intermediate College, Dacca.
3-5-26	N	**Bhagwant Rai,** Munshi Rai, Sardar, M.P.H.S., *Retired District Judge.* Bhagwant Ashram, Patiala.
1-8-17	R	***Bhandarkar,** Devadatta Ramkrishna, M.A., Ph.D., F.A.S.B. 35, Ballygunge Circular Road, Calcutta.
6-6-23	N	**Bhanot,** Kali Das, *Late Superintendent, Forests, Jubbal State.* Mokandpur, Dt. Jullundur.
3-5-26	N	**Bhaskaraiya,** C., M.A., *Assistant Director of Commercial Audit.* Kardyl Buildings, Mount Road, Madras.
5-4-26	N	**Bhatia,** M. L., M.Sc., *Lecturer in Zoology.* Lucknow University, Lucknow.
4-3-25	N	**Bhatnagar,** Jagmohan Lal, M.A., *Professor of History.* Randhir College, Kapurthala.
2-4-28	R	**Bhattacharjee,** Nibaran Chandra, M.A., *Professor of Physiology, Presidency College.* 19, Hindusthan Road, Ballygunge, Calcutta.
7-7-09	R	**Bhattacharji,** Shib Nath, M.B. 80, Shambazar Street, Calcutta
4-11-08	R	**Bhattacharya,** Bisvesvar, B.A., M.R.A.S., B.C.S. 16, Townshend Road, Bhowanipore, Calcutta.
7-2-27	N	**Bhattacharya,** D. R., M.Sc., Ph.D., D.Sc., F.R.M.S., F.Z.S., *Head of the Department of Zoology, Allahabad University.* 15, George Town, Allahabad.
1-2-22	N	**Bhattacharya,** Vidhushekhara, Pandit, *Principal, Vidyabhavana.* Visvabharati, Santiniketan, Birbhum.
7-7-24	L	**Bhattacharyya,** Binayatosh, M.A., Ph.D., *General Editor, Gaekwad's Oriental Series, and Librarian, Oriental Collections, Baroda State.* Baroda.
9-6-22	R	**Bhattacharyya,** Sivapada, M.D. School of Tropical Medicine and Hygiene, Central Avenue, Calcutta.

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Date of Election.		
4-6-28	N	**Bhattasali,** NALINI KANTA, M.A., *Curator, Dacca Museum.* Ramna, Dacca.
4-2-25	N	**Bhor,** SHYAM CHAND, *Accountant.* Bhopal Chowk, Bhopal.
4-2-25	A	**Bishop,** THOMAS HENRY, M.R.C.S., L.R.C.P., D.P.H., *Chief Medical Officer, E. B. Ry.* 2, Belvedere Park, Alipore, Calcutta.
5-3-28	R	**Biswas,** CHARU CHANDRA, M.A., B.L., *Advocate, High Court.* 58, Puddopukur Road, P.O. Elgin Road, Calcutta.
1-8-23	R	**Biswas,** KALIPADA, M.A. Royal Botanic Gardens, Sibpur, Howrah
3-1-27	R	**Bivar,** HUGH GODFREY STUART, I.C.S. 1, Old Ballygunge Road, Calcutta.
6-12-22	A	**Blackett,** SIR BASIL PHILLOT, K.C.B., *Finance Member, Government of India.* Delhi.
1-2-93	L	***Bodding,** REV. P. O., M.A. (CHRIST.), F.A.S.B. Mohulpahari, Santhal Parganas.
3-7-12	N	**Bomford,** TREVOR LAWRENCE, M.B., B.S., M.R.C.S., L.R.C.P., LT.-COL., I.M.S. Civil Surgeon, Darjeeling.
2-2-98	R	**Bose,** AMRITA LAL, *Dramatist.* 3, Sham Square (South), Shambazar, Calcutta.
3-7-18	R	**Bose,** CHARU CHANDRA, B.A., M.B., *Professor of Pathology, Carmichael Medical College.* 52/2, Mirzapur Street, Calcutta.
7-2-27	R	**Bose,** DEBENDRA MOHAN, M.A. (CAL.), B.SC. (LOND.), PH.D. (BERLIN), *Professor of Physics.* 92/3, Upper Circular Road, Calcutta.
6-5-25	R	**Bose,** H. M., B.A., *Bar.-at-Law.* 177, Lower Circular Road, Calcutta.
6-3-95	R	***Bose,** SIR JAGADIS CHANDRA, KT., C.S.I., C.I.E., F.R.S., M.A., D.SC., F.A.S.B. Bose Institute, 91, Upper Circular Road, Calcutta.
5-4-22	N	**Bose,** JOGESH CHANDRA, VIDYABINODE, *Landholder.* Bhagwanpur, Dt. Midnapore.
6-7-25	R	**Bose,** MANMATHA MOHAN, M.A., *Professor, Scottish Churches College.* 19, Gokul Mitra Lane, Hatkhola, Calcutta.
5-11-28	N	**Bose** Mullick, G. N., M.A., *Professor of History.* Meerut College, Meerut, U.P.
6-7-10	N	**Botham,** THE HON'BLE MR. ARTHUR WILLIAM, C.S.I., C.I.E., I.C.S., *Vice-President, Assam Executive Council.* Shillong.
2-11-25	A	**Bradshaw,** ERIC JEAN, B.A., B.A.I., F.G.S., *Resident Geologist.* Yenangyaung, Burma.
6-12-26	R	**Brahmachari,** BIPIN BIHARI, D.P.H., *Asst. Director of Public Health, Bengal.* 283, Ballygunge Avenue, Calcutta.
4-1-26	A	**Brahmachari,** INDU BHUSAN, *University Lecturer.* 110-2, Dhakuria Road, Kalighat, Calcutta.
1-1-08	L	***Brahmachari,** UPENDRA NATH, RAI BAHADUR, M.A., PH.D., M.D., F.A.S.B. 82/3, Cornwallis Street, Calcutta.
7-11-27	N	**Brahmachary,** SARAT CH., RAI SAHEB, M.A., B.T., *Superintendent.* Normal Training School, Hughli.
4-4-27	R	**Bridge,** REV. PETER GONZALEZ, D.D., *Principal, St. Paul's College.* 33/1, Amherst Street, Calcutta.
4-2-20	N	**Brij Narayan,** M.A., F.R.HIST.S., M.R.A.S., *Deputy Collector of Military Accounts, Western Command and Baluchistan Dist.* Quetta.
5-7-07	L	***Brown,** JOHN COGGIN, O.B.E., D.SC., F.G.S., M.I.M.E., M.INST.M.M., M.I.E., F.A.S.B. Geological Survey of India, Indian Museum, Calcutta.

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Date of Election		
6-10-09	A	**Brown,** PERCY, A.R.C.A. Government School of Art, Calcutta.
5-3-24	R	**Browne,** H., MAJOR, M.B.E., A.R.I.B.A., *Architect.* Messrs. Martin & Co., 6 & 7, Clive Street, Calcutta.
2-7-24	F	**Browne,** REV. L. E., M.A. 21, The Drive, Northampton, England.
6-10-09	L	*__Brühl,__ PAUL JOHANNES, I.S.O., D.SC., F.C.S., F.G.S., F.A.S.B. 2, Convent Road, Bangalore.
8-1-96	N	*__Burn,__ SIR RICHARD, KT., C.I.E., I.C.S., F.A.S.B. Board of Revenue, Allahabad, U.P.
4-3-25	N	**Buyers,** WILLIAM ALEXANDER, M.I.C.E., *Senior Government Inspector of Railways.* Bombay.
2-4-13	R	**Calder,** CHARLES CUMMING, B.SC., F.L.S. Royal Botanic Gardens, Sibpur, Howrah.
2-8-26	R	**Calder,** NORMAN DOUGLAS, *Deputy Traffic Manager, E. B. Ry.* 3, Belvedere Park, Alipore, Calcutta.
7-2-27	R	**Captain,** DARA MANEKSHAW, *Merchant.* 1, Corporation Street, Calcutta.
7-12-25	A	**Carritt,** STANLEY ERNEST. c/o Messrs. Thacker Spink & Co., 3, Esplanade, Calcutta.
1-9-20	R	**Chakladar,** HARAN CHANDRA, M.A. 28/4, Srimohan Lane, Kalighat, Calcutta.
7-3-27	R	**Chakravarti,** BYOMKES, M.A., *Barrister-at-Law.* 237, Lower Circular Road, Calcutta.
4-7-27	R	**Chakravarti,** CHINTAHARAN, M.A., *Hon. Assistant Secretary, Sanskrit Sahitya Parishat.* Shambazar, Calcutta.
3-3-09	R	**Chakravarti,** NILMANI, M.A. 103-A, Kalighat Road, Calcutta.
3-1-27	N	**Chakravarty,** NIRANJANPRASAD, PH.D. (Cantab.), *Government Epigraphist.* Office of the Government Epigraphist, Ootacamund, Nilgiris, S. India.
1-9-20	R	*__Chanda,__ RAMAPRASAD, RAI BAHADUR, B.A., F.A.S.B. 37A, Police Hospital Road, Calcutta.
3-1-06	L	**Chapman,** JOHN ALEXANDER. c/o The Imperial Library, Calcutta.
7-5-28	R	**Chatterjea,** SIR NALINI RANJAN, KT., M.A., B.L., *Retired Judge and sometime acting Chief Justice, Calcutta High Court.* 91A, Harish Mukerjee Road, Bhowanipore, Calcutta.
7-2-27	R	**Chatterjee,** ASHOKE, B.A. (CAL.), B.A. (CANTAB.), *Editor, "Welfare."* 91, Upper Circular Road, Calcutta.
27-10-15	F	**Chatterjee,** SIR ATUL CHANDRA, KT., I.C.S., *High Commissioner for India.* 42, Grosvenor Gardens, London, S.W. 1.
4-7-27	R	**Chatterjee,** PATITPABON, M.A., B.L., *Vakil, High Court.* 84, Harrison Road, Calcutta.
1-10-20	R	**Chatterjee,** NIRMAL CHANDRA. 52, Haris Mukerjee Road, Bhowanipore, Calcutta.
3-12-24	R	**Chatterjee,** SAILENDRA NATH, *Deputy Assistant Controller of Military Accounts (P. & A. District).* 9/4, Badur Bagan Row, Calcutta.
6-8-28	R	**Chatterjee,** SUSHIL CHANDRA M.A., *Government Research Scholar.* Presidency College, Calcutta.
7-5-28	R	**Chatterji,** KEDAR NATH, B.Sc. (London), A.E.C.S. (London). 2-1, Townshend Road, Calcutta.
4-1-26	R	**Chatterji,** KSHITISH CHANDRA, M.A., *Lecturer in Comparative Philology, Calcutta University.* 61-A, Ramkanta Bose Street, Baghbazar, Calcutta.

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Date of Election.		
7-6-11	R	**Chatterji,** KARUNA KUMAR, LT.-COL., I.T.F., M.C., V.H.S. 6/1, Wood Street, Calcutta.
5-3-24	R	**Chatterji,** MOHINI MOHAN, M.A., B.L., *President, Incorporated Law Society of Calcutta.* 33, McLeod Street, Calcutta.
6-8-24	R	**Chatterji,** SUNITI KUMAR, M.A., D.LIT., *Khaira Professor, Calcutta University.* 3, Sukias Row, Calcutta.
5-11-24	R	**Chattopadhyay,** K. P., M.A. (CANTAB.), *Education Officer, Corporation of Calcutta.* 20, Mayfair, Ballygunge, Calcutta.
2-11-25	N	**Chattopadhyaya,** KSHETRESA CHANDRA, M.A., *Lecturer in Sanskrit.* Allahabad University, Allahabad.
2-1-28	N	**Chaube,** RAM KUMAR, PANDIT, M.A., L.T. (Benares), M.A. (Cal.), M.R.A.S. (Lond.), *Member, Benares Mathematical Society.* Azmatgarh Palace, Benares.
28-9-93	R	***Chaudhuri,** B. L., B.A., D.SC. (EDIN.), F.R.S.E., F.L.S. (LOND.), F.A.S.B. 9A, South Road, Entally, Calcutta *and* Sherpur Town, Mymensingh.
1-4-14	A	**Chaudhuri,** GOPAL DAS. 32, Beadon Row, Calcutta.
1-2-26	N	**Chaudhuri,** HARAPRASAD, PH.D., *Reader in Botany.* Punjab University, Lahore.
4-3-25	R	**Chaudhuri,** J., B.A. (OXON.), M.A. (CAL.), *Barrister-at-Law.* 34, Ballygunge Circular Road, Calcutta.
4-2-14	R	**Chaudhuri,** THE HON'BLE NAWAB BAHADUR SAIYED NAWAB ALI, KHAN BAHADUR, C.I.E. 4, Old Ballygunge, Calcutta.
4-4-27	N	**Chetty,** R. K. SHANMUKHAM, M.L.A., *Pleader.* Hawarden Race Course, Coimbatore.
3-8-25	N	**Chhibber,** H. L., M.SC., F.G.S., F.R.G.S., *Asst. Superintendent, Geological Survey of India, Burma Party.* 230, Dalhousie Street, Rangoon.
6-12-26	R	**Chokhani,** SREENARAYAN, *Secretary, Shree Hanuman Pustkalaya.* 8, New Ghuseri Road, Salkea, Howrah.
5-12-23	R	**Chopra,** B. N., *Asst. Superintendent, Zoological Survey of India.* Indian Museum, Calcutta.
1-2-22	R	**Chopra,** R. N., LT.-COL., I.M.S., *Professor of Pharmacology.* School of Tropical Medicine and Hygiene, Central Avenue, Calcutta.
5-11-28	R	**Choprha,** GOPICHAND, *Student.* 47, Khangraputty, Calcutta.
7-5-28	R	**Chowdhury,** A. N., B.SC., *Zemindar.* 42, Hem Chandra Street, Kidderpore, Calcutta.
5-12-27	L	**Chowdhury,** CHHAJURAM, C.I.E., M.L.C., 21, Belvedere Road, Calcutta.
2-4-28	R	**Chowdhury,** RAI JATINDRANATH, *Zemindar.* 36, Russa Road, Tollygunge, Calcutta.
3-7-07	R	***Christie,** WILLIAM ALEXANDER KYNOCH, B.SC., PH.D., M.INST.M.M., F.A.S.B. Geological Survey of India, Indian Museum, Calcutta.
3-11-09	N	***Christophers,** SAMUEL RICHARD, C.I.E., O.B.E., F.A.S.B., M.B., LT.-COL., I.M.S. Central Research Institute, Kasauli.
1-9-15	R	**Cleghorn,** MAUDE LINA WEST (MISS), F.L.S., F.E.S. 12, Alipur Road, Calcutta.
2-5-27	R	**Clegg,** EDWARD LESLIE GILBERT, B.SC., *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
2-5-23	A	**Collenberg,** BARON H. RUDT VON, *Consul-General for Germany.* 2, Store Road, Calcutta.
1-11-26	R	**Collet,** ARTHUR LOWE, *Solicitor.* Messrs. Leslie & Hinds, 6, Hastings Street, Calcutta.

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Date of Election		
1-12-20	R	**Connor,** Sir Frank Powell, kt., Lt.-Col., i.m.s., d.s.o., f.r.c.s., *Professor of Surgery, Medical College.* 2, Upper Wood Street, Calcutta.
3-6-24	R	**Cooper,** H., *Manufacturing Chemist.* 18, Convent Road, Calcutta.
3-8-25	R	**Coyajee,** Sir J. C., kt., b.a. (Cantab.), ll.b., i.e.s., *Professor, Presidency College.* 2B, Camac Street, Calcutta.
25-8-87	R	**Criper,** William Risdon, f.c.s., f.i.c., a.r.s.m. Konnagar.
2-11-25	R	**Crookshank,** Henry, *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
4-1-26	N	**Cunningham,** J., m.d., Lt. Col., i.m.s., *Director, Pasteur Institute of India.* Kasauli, Punjab.
4-3-25	R	**Das,** Ajit Nath, m.r.a.s., f.z.s., *Zemindar.* 24, South Road, Entally, Calcutta.
6-8-28	N	**Das,** Ayodhya, *Barrister-at-law.* Gorakhpur, U.P.
2-4-24	R	**Das,** Biraj Mohan, m.a.(Cal.), m.sc.(Lond.), *Superintendent, Calcutta Research Tannery.* 2/1, Kirti Mitter Lane, Calcutta.
7-11-27	R	**Das,** Dhirendra Kumar, b.a., b.l., *Pleader.* 10/1, Bipradas Street, Calcutta.
5-3-28	R	**Das,** Kedarnath, c.i.e., m.d., *Principal, Carmichael Medical College.* 22, Bethune Row, Calcutta.
2-7-28	R	**Das,** Probodh Kumar, m a., b.l. P-84, Park Street Extension, Calcutta.
3-12-24	R	**Das,** Surendra Nath. m.b., *Medical Practitioner.* 67, Nimtala Ghat Street, Calcutta.
1-9-15	R	**Das-Gupta,** Hem Chandra, m.a., f.g.s., *Professor, Presidency College.* 60, Chakrabere Road, North, Calcutta.
6-9-22	R	**Das-Gupta,** Surendra Nath, m.a., ph.d., *Professor of Sanskrit and Philosophy, Presidency College.* 104, Bakul Bagan Road, Calcutta.
2-1-28	N	**Dastidar,** Nalini Kanta Rai, Rai Bahadur, *Zemindar.* Sylhet, Assam.
1-3-26	R	**Datta,** Hirendra Nath, m.a., b.l., *Solicitor, High Court.* 139, Cornwallis Street, Calcutta.
5-3-28	R	**Datta,** Nogendra lal, *Merchant and Landholder.* 76, Beadon Street, Calcutta.
3-6-25	F	**Datta,** S. K., b.a., m.b., ch.b. (edin.). 2, Rue Général Dafour, Geneva, Switzerland.
6-8-24	L	**Davies,** L. M., Major, *Royal Artillery.* c/o The Lloyds Bank, King's Branch, 6, Pall Mall, London.
2-8-26	R	**De,** Brajendranath, m.a., i.c.s. (retired). 11, Lower Rawdon Street, Calcutta.
2-4-24	R	**De,** F. L., Rai Bahadur. 99, Grey Street, Calcutta.
19-9-95	L	**De,** Kiran Chandra, c.i.e., b.a., i.c.s., (retired). 21, Camac Street, Calcutta.
7-11-27	R	**De,** P. C., I.C.S., *District and Sessions Judge.* Hughli.
7-6-26	R	**De,** Phanindranath, m.a., b.l., *Vakil, High Court.* 4, Patuatola Lane, Calcutta.
3-1-27	R	**De,** Satish Chandra, m.a., b.l., i.e.s. (retired). 11, Ray Street, Elgin Road P.O., Calcutta.
6-6-17	R	**Deb,** Kumar Harit Krishna, m.a., *Zemindar.* 8, Raja Nabokishen Street, Calcutta.
7-9-21	R	**Deb,** Kumar Profulla Krishna, *Zemindar.* 106/1, Grey Street, Calcutta.
4-3-25	R	**Deb,** Kshitindra, Rai Mahasai of Bansberia, Raj, Raja. 21/E, Rani Sankari Lane, Kalighat, Calcutta.

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5-12-27	L	**Dechhen,** H.H. MAHARANI KUNZANG, *Maharani of Sikkim.* Gangtok, Sikkim.
7-12-25	R	**Derviche-Jones,** ARTHUR DANIEL, LT.-COL., D.S.O., M.C., *Solicitor.* c/o Messrs. Orr Dignam & Co., Standard Buildings, Dalhousie Square, Calcutta.
4-4-27	R	**Dewick,** REV. EDWARD CHISHOLM, M.A. (CANTAB.), *National Literature Secretary, Y.M.C.A. of India, Burmah and Ceylon.* 5, Russell Street, Calcutta.
5-11-28	R	**Dey,** DEBAKAR, RAI SAHEB, *Principal and Senior Professor of Veterinary Medicines, Bengal Veterinary College.* Belgachia, Calcutta.
4-5-10	L	**Dhavle,** SANKARA BALAJI, I.C.S., *District and Sessions Judge.* Laheria Sarai, *DARBHANGA.*
7-3-27	F	**Dikkers,** FREDERIK GERHARD. c/o Koninklijke Weefgoederenfabriek, v/h C. F. Stork and Co., Hengelo (o), Holland.
4-8-20	R	**Dikshit,** KASHINATH NARAYAN, M.A., *Superintendent, Archæological Survey of India.* Indian Museum, Calcutta.
5-1-98	R	**Dods,** WILLIAM KANE, *Agent, Hongkong and Shanghai Banking Corporation.* 6, Minto Park, Alipur Road, Calcutta.
2-7-02	L	**Doxey,** FREDERICK. 63, Park Street, Calcutta.
6-8-28	R	**Drummond,** J. G. M.A., I.C.S., J.P., *Secretary, Local Self-Government, Government of Bengal.* 4, Theatre Road, Calcutta.
6-12-26	R	**Dutt,** JOGEN CHUNDER, M.A., B.L., *Attorney-at-Law.* 17, Maniktola Street, Calcutta.
4-2-25	R	**Dutt,** KIRAN CHANDRA, *Zemindar.* Laksmi Nibas, 1, Laksmi Dutt Lane, Baghbazar, Calcutta.
7-4-20	R	**Dutt,** KUMAR KRISHNA. 10, Hastings Street, Calcutta.
2-1-28	N	**Dutt,** PROMODE CHANDRA, RAI BAHADUR, *Pleader, Ex-Minister for Local Self-Government, Assam.* Sylhet, Assam.
5-3-28	R	**Eberl,** OTTO, DR. JUR., *Vice-Consul for Germany.* 2, Store Road, Ballygunge, Calcutta.
1-2-26	A	**Edwards,** C. A. HENRY, *Deputy Chief Engineer, E. B. Ry.* 8, Belvedere Park, Alipore, Calcutta.
6-8-28	F	**Elberg,** (MRS.) *Adeline Adrienne Johanna (née Rudolph).* c/o Netherlands Trading Society, Hongkong.
1-11-11	R	**Esch,** V. J., *Architect.* Victoria Memorial, Cathedral Avenue, Maidan, Calcutta.
6-2-28	R	**Evans,** FRANK LUCAS, *Insurance Manager, Century Insurance Co.* 4, Lyons Range, Calcutta.
6-2-28	L	**Ezra,** SIR DAVID, KT., F.Z.S. 3, Kyd Street, Calcutta.
2-5-27	N	**Feegrade,** E. S., M.D., *Indian Medical Department, Special Malaria Officer, Burma.* Sir Harcourt Butler Institute of Public Health, 2, Theatre Road, Rangoon.
3-8-04	R	***Fermor,** LEWIS LEIGH, A.R.S.M., D.SC., F.G.S., F.A.S.B. Geological Survey of India, Indian Museum, Calcutta.
31-10-06	N	**Finlow,** ROBERT STEEL, C.I.E., B.SC., F.I.C., *Director of Agriculture, Bengal.* Ramna, Dacca.
7-11-27	R	**Fitzgerald,** T. J., *Manager, U.S. Rubber Export Co.* 5, Hastings Street, Calcutta.
5-3-24	A	**Fitzpatrick,** H., *Engineer.* 17, Stephen Court, Calcutta.
4-1-26	R	**Fleming,** ANDREW, *General Manager for the East, Minimax, Ltd.* 59, Park Street, Calcutta.

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5-11-13	R	**Fox,** CYRIL S., B.SC., M.I.M.E., F.G.S. Geological Survey of India, Indian Museum, Calcutta.
7-3-27	N	**French,** JOSEPH CHARLES, *Indian Civil Service.* Magistrate and Collector, Murshidabad.
2-4-19	N	**Friel,** RALPH, I.C.S. Silchar, Assam.
7-3-27	F	**Fukushima,** NAOSHIRO, *Assistant in the Sanskrit Seminary.* Imperial University, Tokio, Japan.
5-3-28	R	**Fullerton,** GEORGE MACFARLAND, B.SC., *Banking.* c/o The National City Bank of New York, 4, Clive Street, Calcutta.
4-1-26	N	**Gaffar,** ABDUL, KHAN SAHEB, *Deputy Collector.* Midnapur.
5-11-28	R	**Galstaun,** JOHN CARAPIET, *Merchant and Landholder.* 234/4, Lower Circular Road, Calcutta.
1-11-26	R	**Galstaun,** SHANAZAN, M.A., D.M.R.E., M.R.C.S., L.R.C.P., *Medical Practitioner, Radiologist, Medical College Hospital.* 39, Theatre Road, Calcutta.
7-10-09	R	**Gangoly,** ORDHENDRA COOMAR, B.A. 12/1, Gangoly Lane, Calcutta.
6-2-28	R	**Gangooly,** J. P. Government School of Art, 28, Chowringhee, Calcutta.
2-11-25	R	**Gee,** EDWARD ROWLAND, B.A. (CANTAB.), *Asst. Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
7-5-28	R	**Ghosal,** UPENDRA NATH, M.A., PH.D., *Professor of History, Presidency College.* 12, Badur Bagan Row, Calcutta.
5-4-26	R	**Ghose,** BIMAL CHANDRA, *Barrister-at-Law.* 27/1, Haris Mukherjee Road, Calcutta.
2-4-24	R	**Ghose,** SIR CHARU CHANDRA, KT., *Barrister-at-Law, Judge, High Court.* 10, Debendra Ghose Road, Bhowanipore, Calcutta.
2-7-24	R	**Ghose,** BEPIN BEHARI, M.A., B.L., *Judge, High Court.* 11, Dover Lane, Ballygunge, Calcutta.
3-12-24	R	**Ghose,** SUSHIL CHANDRA, B.A., *Deputy Magistrate.* 1, Sikdarbagan Street, Calcutta.
6-12-26	R	**Ghosh,** B. K., *Barrister-at-Law.* 10, Rawdon Street, Calcutta.
2-4-28	R	**Ghosh,** Bepin Behari, M.B., *Medical Practitioner.* 1, Hem Kar Lane, Shambazar, Calcutta.
7-11-27	R	**Ghosh,** DEBENDRA NATH, M.B., *Medical Practitioner.* 1/1, Gour Laha Street, Calcutta.
7-2-27	N	**Ghosh,** JNANENDRA CHANDRA, D.SC., *Professor of Chemistry.* Dacca University, Ramna, Dacca.
2-4-24	R	**Ghosh,** K., D.T.M., D.P.H. (CANTAB.), L.M.S., *Medical Practitioner.* 45, Creek Row, Calcutta.
5-12-27	R	**Ghosh,** KISOR, M.SC., *Solicitor.* 10, Hastings Street, Calcutta.
6-2-18	L	**Ghosh,** EKENDRA NATH, M.D., M.SC., F.Z.S., F.R.M.S., *Professor of Biology, Medical College.* 66, Cornwallis Street, Calcutta.
7-3-27	R	**Ghosh,** PHANINDRA NATH, M.A., PH.D., SC.D. (PADUA), *Sir Rashbehary Ghosh Professor of Applied Physics, University of Calcutta.* 92, Upper Circular Road, Calcutta.
5-5-20	R	**Ghosh,** SUKHENDRA NATH, B.A. (CAL.), B.SC. (GLAS.), M.I.C.E., F.R. SAN. I., M.I.E., *Executive Engineer, P.W.D., Central Division, Bengal.* 7, Heysham Road, Calcutta.
4-9-12	R	**Ghosh,** TARAPADA. 14, Paddapukur Street, Kidderpore, Calcutta.

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1-2-26	R	**Ghuznavi,** A. H., M.L.A., *Merchant and Zemindar.* 18, Canal Street, Entally, Calcutta.
6-8-28	R	**Ghuznavi,** Iskander S.K., *Zemindar and Member, Advisory Board of Industries, Government of Bengal.* 30, Theatre Road, Calcutta, (*and*) Dilduar, Mymensingh.
1-2-26	R	**Ghuznavi,** The Hon'ble Hadji, Sir Abdel Kerim Abu Ahmed Khan, KT., M.L.C., *Zemindar of Dilduar,* 139, Dhurrumtolla Street, Calcutta, (*and*) North House, Dilduar, Mymensingh.
3-12-24	A	**Gilbert,** W. G. L., *Manager, Shahdara Saharanpur Light Railways.* Delhi.
5-3-28	R	**Gooptu,** Dwijendra Nath, *Medical Practitioner* and *Landholder.* 5, Middleton Street, Calcutta.
7-9-10	N	***Gravely,** Frederic Henry, D.Sc., F.A.S.B. Museum House, Egmore, Madras.
3-5-05	F	**Graves,** Henry George, A.R.S.M. 52, Cardington Road, Bedford, England.
5-3-24	A	**Greaves,** Sir Ewart, KT., *Judge, High Court.* 2, Short Street, Calcutta.
5-12-00	L	**Grieve,** James Wyndham Alleyne. c/o Messrs. Coutts & Co., 440, Strand, London, W.C. 2.
1-8-27	R	**Grimes,** The Ven'ble Cecil John, *Archdeacon of Calcutta.* 6, Esplanade Row East, Calcutta.
4-2-25	R	**Guha,** B. S., M.A., PH.D. (Harvard). Indian Museum, Calcutta.
6-12-26	R	**Guha,** Surendranath, Rai Bahadur, *Senior Government Pleader.* 18, Ram Mohan Dutt Road, Bhawanipur, Calcutta.
1-3-26	N	**Gupta,** Dhirendra Nath, Major, I.M.S., *Behar and Orissa Medical Service.* Assistant Surgeon, Sadar Hospital, Arrah.
7-5-28	R	**Gupta,** J. N., M.B.E., C.I.E., I.C.S., *Member, Board of Revenue, Government of Bengal.* 7, Pretoria Street, Calcutta.
7-3-23	R	**Gupta,** N., *Barrister-at-Law.* Calcutta Club, 241, Lower Circular Road, Calcutta.
5-3-19	N	**Gupta,** Sivaprasad. Seva Upavana, Benares City.
5-4-26	R	**Gupta,** Surendra Nath, *Insurance Broker.* 101/1, Clive Street, Calcutta.
3-6-25	R	**Gupta,** Tara Prasanna, M.A. 28/2/1, Akhil Mistry Lane, Calcutta.
5-8-15	N	**Gurner,** Cyril Walter, I.C.S. District Magistrate, Mymensingh.
4-1-26	R	**Habib,** Mohammad, B.A. (Oxon.), M.R.A.S., *Barrister-at-Law, Professor of History.* Muslim University, Aligarh.
6-5-25	N	**Habibullah,** Sir Md., KT., Khan Bahadur, *Member for Education, Health and Lands, Government of India.* Simla and Delhi.
6-3-01	N	**Habibur** Rahman Khan, *Rais.* Bhikanpur, District Aligarh.
7-8-07	F	***Haines,** Henry Haselfoot, C.I.E., F.C.H., F.L.S., F.A.S.B. Glen Ashton, Wimborne, Dorset, England.
2-11-21	N	**Haq,** Shah Emdadul, M.L.C. Bhowksar, Mudafargar, Dist. Tipperah.
2-4-28	N	**Hargopal,** Pandit, *Government Jagirdar, Landlord.* Turkman Gate, Delhi.
1-5-12	R	**Harley,** Alexander Hamilton, M.A., *Principal.* Islamia College, Calcutta.

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2-5-23	A	**Harnett,** W. L., Lt.-Col., I.M.S., M.B., F.R.C.S., *Principal.* Medical College, Calcutta.
1-2-26	R	**Harris,** H. G., *Director, Messrs. Martin & Harris, Ltd.* 8, Waterloo Street, Calcutta.
2-4-28	R	**Harris,** Lawrence Ernest, *Engineer, Manager for India, Messrs. Sulzer Brothers.* 11, Clive Street (P.O. Box No. 508), Calcutta.
5-3-28	R	**Hawes,** George Laurence, M.C., *Underwriter.* 4, Merlin Park, Ballygunge, Calcutta.
4-4-27	N	**Helland,** Bernhard Alvin, B.A., *Augsburg College (U.S.A.),* B.D., *Augsburg Seminary (U.S.A.),* M.A., *University of Minnesota (U.S.A.), Missionary-Teacher, under appointment as Principal, Kaerabani Boys' Middle English and Guru Training School.* Kaerabani, via Dumka, Santal Parganas.
5-11-19	N	**Hemraj,** Raj Guru, Pandit. Dhokatol, Nepal.
3-12-24	R	**Hendry,** C. A. John, F.R.G.S., M.I.S.E., A.M.I.M.E., M.I.E., M.MIN.I., *Consulting Mechanical Engineer, Messrs. Martin & Co.* 6 & 7, Clive Street, Calcutta.
6-8-28	R	**Heron,** A. M., D.SC. (Edin.), F.G.S., F.R.G.S., F.R.S.E., *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
7-6-11	R	***Hidāyat Hosain,** Muhammad, Shams-ul-'Ulamā, Khan Bahadur, PH.D., F.A.S.B. 96/2c, Collin Street, Calcutta.
1-2-26	R	**Hingston,** H., Major, I.M.S., M.D., *Surgeon to H.E. the Governor of Bengal.* 5, Wellesley Place, Calcutta.
4-6-28	N	**Hobart,** Robert Charles, I.C.S., *Collector.* Bareilly, U.P.
1-4-25	R	**Hobbs,** Henry, *Merchant.* 4, Esplanade East, Calcutta.
7-6-26	N	**Hodge,** E. H. Vere, B.A., M.D. (Cantab.), M.R.C.P. (Lond.), Lt.-Col., I.M.S., *Civil Surgeon.* Darjeeling.
7-3-27	N	**Hopkinson,** Arthur John, I.C.S. Wadhwan Camp, Kathiawar.
2-11-21	R	**Hora,** Sunder Lal, D.SC. Zoological Survey of India, Indian Museum, Calcutta.
4-3-25	R	**Hossain,** Muhammad Basheer, M.A., B.T. 20/B, Harrison Road, Calcutta.
2-1-73	L	**Houstoun,** George L., F.G.S. Johnstone Castle, Renfrewshire, Scotland.
6-6-23	N	**Howard,** A., C.I.E., M.A., *Director, Institute of Plant Industry, and Agricultural Adviser to States in Central India.* Indore, C.I.
4-1-26	R	**Hubert,** Otto, *Chancellor to the German Consulate General.* 2, Store Road, Ballygunge, Calcutta.
2-4-24	R	**Huq,** Mahfuzul, M.A., *Lecturer, Presidency College.* 13/1, Collin Lane, Calcutta.
2-5-27	F	**Hürlimann,** Martin, Dr. Phil. Sihlberg, Zurich 2, Switzerland.
1-2-26	N	**Husain,** Mohammad Afzal, M.SC., M.A., *Entomologist to the Government of the Punjab.* Lyallpur, Punjab.
6-6-23	N	**Hutton,** J. H., C.I.E., I.C.S., M.A., D.SC., *Hon. Director of Ethnography.* Kohima, Naga Hills, Assam.
7-2-27	N	**Imam,** Abu Mohammad Syed Hassan, *Zemindar.* Hasnain Manzil, Gaya, E.I.R.
2-1-28	N	**Imam,** Syed Hasan, *Barrister-at-law.* Hasan Munzil, Patna.
1-2-11	L	**Insch,** James. c/o Messrs. Duncan Bros. & Co., 101, Clive Street, Calcutta.

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5-11-28	R	**Ishaque,** MOHAMMAD, M.A., B.SC., M.R.A.S., *Lecturer, Calcutta University.* 102, Prinsep Street, P. O. Dhurrumtollah, Calcutta.
2-7-24	N	**Iyengar,** M. O. PARTHASARATHY, M.A., L.T., *Professor of Botany.* Presidency College, Madras.
5-12-23	R	**Jackson,** P. S. 14, Old Court House Street, Calcutta.
6-6-27	L	**Jain,** BALDEODAS, *Merchant and Banker.* 21, Armenian Street, Calcutta.
2-2-21	R	**Jain,** CHHOTE LAL, M.R.A.S. 25, Central Avenue North, Calcutta.
6-8-28	N	**Jaitly,** P.L., *Electrical Engineer, Merchant.* 15, Canning Road, Allahabad.
6-6-27	N	**James,** FREDERICK ERNEST, O.B.E. United Planters' Association of South India, Mercantile Buildings, First Line Beach, Madras.
2-8-26	R	**James,** JOHN LANGFORD, *Barrister.* 2, Short Street, Calcutta.
2-11-25	A	**James,** RICHARD CONGDON, *Tea Planter.* Dhoolie T. E., Rangajan, Assam.
1-11-26	N	**Jameson,** THOMAS BLANDFORD, MAJOR, M.C., M.A. (CANTAB.), I.C.S., *District and Sessions Judge.* Midnapore.
7-5-28	R	**Jardine,** ALEXANDER, D.SC., M. INST. C.E., M.I.E. (IND.), *Director, Messrs. Jessop & Co., Ld.* 93, Clive Street, Calcutta.
6-5-25	R	**Jatia,** SIR ONKAR MULL, KT., O.B.E., *Merchant.* 2, Rupchand Roy Street, Calcutta.
7-2-23	A	**Jinavijayaji,** MUNI, *Principal, Gujerat Puratattva Mandir.* Ellisbridge, Ahmedabad.
3-6-08	R	**Jones,** HUBERT CECIL, A.R.S.M., A.R.C.S., F.G.S., *Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
5-4-26	A	**Jones,** THORNTON, *Solicitor.* c/o Messrs. Morgan & Co., 4, Hastings Street, Calcutta.
2-4-24	R	**Judah,** N. J., M.B., CH.B., F.R.C.S. 2, Hungerford Street, Calcutta.
1-11-11	L	**Kamaluddin** AHMAD, SHAMS-UL-'ULAMĀ, M.A., I.E.S. Krishnagar College, Krishnagar.
5-3-24	R	**Kanjilal,** M. N., M.A. (CAL.), LL.B. (CANTAB.), *Barrister-at-Law.* 17, Loudon Street, Calcutta.
5-11-24	R	**Kapur,** SHAMLAL, *Import and Banking.* 84, Khengrapatty, Calcutta.
1-2-26	N	**Kashyap,** SHIV RAM, *Professor of Botany.* Government College, Lahore.
10-6-12	R	**Kazim Shirazi,** AGA MOHAMMED. 16A, Ahiripukur 1st Lane, Ballygunge, Calcutta.
5-11-28	R	**Keable,** REV. GEOFFREY, M.A., *Lecturer, Bishop's College.* 224, Lower Circular Road, Calcutta.
6-6-27	R	**Keelan,** DOUGLAS HUGH, V.D., *Chief Commercial Manager, E.I. Ry.* United Service Club, Calcutta.
4-2-20	R	**Keir,** W. I., A.R.I.B.A., *Consulting Architect to the Govt. of Bengal.* Writers' Buildings, Calcutta.
5-5-10	A	***Kemp,** STANLEY W., B.A., D.SC., F.A.S.B. "Discovery Expedition," 52, Queen Anne Chambers, Dean Farrar Street, London, S. W. 1.
6-2-28	F	**Kewal,** GANDA SINGH, PH. B.SC., I.O.G.E., F.R.G.S. (*London*), F.T.S., F.I.A.SC. (*London*). Post Box No. 1, Abadan (Persian Gulf).

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3-2-15	N	**Khan,** HAFIZ AHMED ALI, *Controller of Household and Officer-in-charge, State-Library.* Rampur State, U.P.
1-2-26	R	**Khaitan,** D. P., M.L.C., *Attorney-at-Law ; Solicitor and Merchant.* 137, Canning Street, Calcutta.
1-2-26	R	**Khambata,** R. B., M.R.C.S., L.R.C.P., D.P.H., *Director of Public Health Laboratory and Professor of Laboratory Practice, School of Tropical Medicine and Hygiene.* 2-B, Camac Street, Calcutta.
6-2-28	N	**Khan,** MOHD. ABDUR RAHMAN, A.R.C.S., B.SC., F.P.L., F.O.U., *Principal, Osmania University College.* Hyderabad, Deccan.
6-5-25	R	**Khanna,** VINAYEK LAL, M.R.A.S., *Merchant.* 2/1, Nunda Lal Mallick 2nd Lane, Beadon St. P.O., Calcutta.
2-8-26	R	**Khettry,** BENIMADHO, *Proprietor, Messrs. Gouri Shanker Khettry, Landholders, Bankers & Merchants.* 15, Paggiyapatti, Barabazar, Calcutta.
7-4-09	A	**Kilner,** JOHN NEWPORT, M.B., M.R.C.S., L.R.C.P. Adra, Chota Nagpur.
2-11-25	A	**Kimura,** R. (Ko-Shi), *Lecturer, Calcutta University.* c/o Risshyo Dai Gaku Osaki Machi, Tokyo, Japan.
7-7-20	R	***Knowles,** ROBERT, M.R.C.S., L.R.C.P., B.A. (CANTAB.), F.A.S.B., LT.-COL., I.M.S. 63, Park Street, Calcutta.
6-5-25	A	**Koester,** HANS, *Vice-Consul for Germany.* 17/1, Store Road, Ballygunge, Calcutta.
6-5-25	R	**Kolah,** K. S., *Merchant.* 8, Dhurrumtollah Street, Calcutta.
5-3-23	N	**Korke,** VISHNU TATYAJI, CAPTAIN, F.R.C.P. (EDIN.). Central Research Institute, Kasauli.
1-3-26	R	**Kramrisch,** STELLA (MISS), PH.D., *Lecturer in Ancient Indian History (Fine Arts) of Arts, Calcutta University.* 35, Ballygunge Circular Road, Calcutta.
5-11-28	R	**Krishnan,** M. SITARAM, M.A., PH.D., A.R.C.S., D.I.C., *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
2-4-28	R	**Kumar,** KUMAR KRISHNA, M.A., B.L., *Zemindar and Banker.* 31 & 31-1, Burtolla Street, Calcutta.
7-3-23	A	**Labey,** GEORGE THOMAS, *Bengal Pilot Service.* United Service Club, Calcutta.
1-4-25	N	**Laden La,** SONAM WANGFEL, SARDAR BAHADUR, F.R.G.S., *Hony. A.D.C. to H. E. the Governor of Bengal, Chief of Police, Lhassa, Tibet.* Darjeeling.
3-3-20	R	**Lahiri,** JAGADINDRANATH. 91, Upper Circular Road, Calcutta.
3-6-25	N	**Lal,** BUDH BEHARI, RAI SAHEB, B.A., PH.D., *Head Master.* Government High School, Naini Tal.
6-3-89	L	***La Touche,** THOMAS HENRY DIGGES, M.A., F.G.S., F.A.S.B. 230, Hills Road, Cambridge, England.
5-8-14	R	**Law,** BIMALA CHARAN, M.A., B.L., PH.D., F.R.HIST.S. 43, Kailas Bose Street, Calcutta.
1-2-11	R	**Law,** NARENDRA NATH, M.A., B.L., P.R.S., PH.D. 96, Amherst Street, Calcutta.
1-7-14	R	**Law,** SATYA CHURN, M.A., B.L., PH.D., F.Z.S., M.B.O.U. 50, Kailas Bose Street, Calcutta.
1-2-26	R	**Lele,** S. H., M.A., B.SC., *Lecturer in Zoology.* Royal Institute of Science, Bombay.
7-6-26	R	**Lemmon,** RICHARD DENNIS, *Merchant.* 8, Waterloo Street, Calcutta.

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3-5-11	R	**Lomax,** C. E., M.A. La Martiniere, Calcutta.
5-7-26	N	**Lyne,** HOWARD WILLIAM, I.C.S. Khulna, E.B.R.
2-8-05	A	***McCay,** DAVID, LT.-COL., I.M.S., M.D., B.CH., B.A.O., M.R.C.P., F.A.S.B. England.
5-11-24	R	**MacGregor,** A. D., M.B.C., V.S., I.V.S., *Principal.* Bengal Veterinary College, Belgachia, Calcutta.
1-3-26	R	**McKay,** JOHN WALLACE, *Delegate, Chilean Nitrate Committee* (*Indian Delegation*). 7, Hare Street, Calcutta.
11-1-93	L	**Maclagan,** SIR EDWARD DOUGLAS, K.C.S.I., K.C.I.E. 188, West Hill, Putney, London, S.W. 15.
5-3-24	R	**McPherson,** JAMES. c/o Messrs. Begg Dunlop & Co., Ltd., 2, Hare Street, Calcutta.
7-6-16	N	**Mahajan,** SURYA PRASAD. Murarpur, Gaya.
3-3-20	R	**Mahalanobis,** P. C., M.A., B.SC., *Professor, Presidency College.* 10, Cornwallis Street, Calcutta.
5-12-06	R	**Mahalanobis,** SUBODH CHANDRA, B.SC. (EDIN.), F.R.S.E., I.E.S., *Professor, Presidency College.* P-45, New Park Street, Calcutta.
1-3-11	F	**Mahtab,** SIR BIJAY CHAND, K.C.S.I., I.O.M., MAHARAJADHIRAJA BAHADUR OF BURDWAN. 6, Alipur Lane, Calcutta.
6-2-24	R	**Mahindra,** K. C., B.A. (CANTAB.). Accounts Department, Messrs. Martin & Co., 6 & 7, Clive Street, Calcutta.
7-8-18	R	**Maitra,** JATINDRA NATH, *Physician and Surgeon.* 68/A, Beadon Street, Calcutta.
4-7-27	R	**Maitra,** JOGENDRA NATH, M.SC., M.B., *Medical Practitioner.* 58-A, Colootollah Street, Calcutta.
6-2-18	R	**Maitra,** SISIR KUMAR. 35/5, Paddapukur Road, Calcutta.
2-4-28	R	**Majumdar,** AKHIL RANJAN, M.B., *Teacher of Materia Medica, Campbell Medical School.* 29/B, Chittaranjan Avenue, Calcutta.
2-8-26	N	**Majumdar,** DHIRENDRA NATH, M.A., *Lecturer in Anthropology.* University of Lucknow, Lucknow.
6-2-28	R	**Majumdar,** GIRIJA PRASANNA, *Professor of Botany, Presidency College.* Calcutta.
2-6-20	N	**Majumdar,** NANI GOPAL, M.A. Archæological Department, Gorton Castle, Simla.
2-2-16	R	**Majumdar,** NARENDRA KUMAR, M.A., *Professor, Calcutta University.* 18, Jhamapukur, Mechuabazar, Calcutta.
4-6-13	N	**Majumdar,** RAMESH CHANDRA, M.A., PH.D., *Professor.* Dacca University, Ramna, Dacca.
6-2-28	F	**Mallik,** S. N., C.I.E., M.A., B.L., *Member, India Council, India Office, London.* (2, Chandranath Chatterji Street, Calcutta.)
7-5-28	R	**Mallik,** SATYENDRA CHANDRA, M.A., I.C.S., *Judge, High Court.* 7-3, Burdwan Road, Alipur, Calcutta.
6-2-18	L	***Manen,** JOHAN VAN, F.A.S.B. 6, Temple Chambers, 6, Old Post Office Street, Calcutta.
5-6-01	F	**Mann,** HAROLD HART, D.SC., M.SC., F.I.C., F.L.S., Woburn Experimental Station, Aspley Guise, Bedfordshire, England.
10-10-19	N	**Manry,** REV. J. C., M.A., PH.D. Ewing Christian College, Allahabad, U.P.
4-8-20	R	**Martin,** OSWALD. 6 & 7, Clive Street, Calcutta.
5-3-24	R	**Martin,** T. LESLIE, M.A. (CANTAB.). 6, Clive Street, Calcutta.

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4-6-19	N	**Matthai,** GEORGE, M.A., SC.D. (Cantab.), F.R.S.E., F.L.S., F.Z.S., I.E.S., *Professor of Zoology.* Government College, Lahore.
1-2-22	N	**Megaw,** J. W. D., LT.-COL., I.M.S., Inspector-General of Civil Hospitals, Madras.
5-12-23	N	**Meggitt,** F. J., B.SC., PH.D., F.Z.S., I.E.S., *Professor of Biology.* University College, Rangoon.
2-1-28	R	**Mehta,** M. H., *Managing Director, M. T. Ltd.* 15, Chowringhee Place, Calcutta.
3-3-86	L	**Mehta,** ROOSTUMJEE DHUNJEEBHOY, C.I.E., J.P., F.R.S.A. 9, Rainey Park, Ballygunge, Calcutta.
5-3-28	N	**Melhuish,** ROBERT AVELINE, COMMANDER, R.I.M., *Surveyor-in-Charge, Marine Survey of India.* c/o R. I. M. Dockyard, Bombay.
2-1-28	N	**Mello,** FROILANO de, COLONEL, *Director-General of Medical Services in Portuguese India, Professor of Parasitology.* Nova Gôa.
4-2-25	N	**Menon,** K. RAMUNNI, *Professor of Zoology.* Presidency College, Madras.
1-2-26	F	**Meston,** LORD, K.C.S.I., LL.D. Hurst, Cookenham Dene, Berkshire, England.
5-11-84	N	***Middlemiss,** CHARLES STEWART, C.I.E., F.R.S., B.A., F.G.S., F.A.S.B. Srinagar, Kashmir.
3-9-84	R	**Miles,** WILLIAM HENRY, F.E.S., F.Z.S. 7, King Edward Court, Chowringhee, Calcutta.
1-2-26	N	**Mills,** JAMES PHILIP, I.C.S. c/o Lloyds Bank (King's Branch), Calcutta.
2-11-25	R	**Mirza,** M. B., *Merchant.* 18/2, Dilkusha Street, Calcutta.
7-6-26	N	**Mishra,** DEOMITRA, *Public Prosecutor.* Kotah, Rajputana.
5-6-12	N	**Misra,** CHAMPARAM, B.A., *Dy. Director of Industries.* Cawnpore, U.P.
5-11-19	N	**Misra,** PRAMATHA NATH, M.R.A.S., *Pleader.* Malda.
2-4-28	R	**Mitra,** DEBENDRA NATH, B.SC. (LOND.), LL.B., *Barrister-at-Law.* 51/2, Ramkanto Bose Street, Calcutta.
2-4-24	R	**Mitra,** J. C., M.A., B.L., *Retired Accountant-General, Bengal.* 1, Abinash Mitter Lane, Calcutta.
2-4-28	N	**Mitra,** JOGENDRA NATH, L.M.S, *Civil Surgeon.* Comilla.
6-6-06	R	**Mitra,** KUMAR MANMATHA NATH. 34, Shampukur Street, Calcutta.
6-8-28	R	**Mitra,** SUBODH, M.D. (BERLIN), M.B. (CAL.), F.R.C.S. (EDIN.). 148, Russa Road, Bhowanipore, Calcutta.
6-3-24	F	**Mitter,** THE RT. HON'BLE SIR BINOD CHANDRA, KT., *Barrister-at-Law, Member, Judicial Committee of the Privy Council.* London, England.
5-3-24	N	**Mitter,** THE HON'BLE SIR B. L., KT., M.A., B.L., *Barrister-at-Law, Law Member, Viceroy's Council.* Delhi.
5-3-24	R	**Mitter,** DWARKANATH, M.A., D.L., *Judge, High Court.* 12, Theatre Road, Calcutta.
5-4-26	R	**Mitter,** KHAGENDRA NATH, M.A., *Professor, Presidency College.* 61A, Ram Kanta Bose Street, Baghbazar, Calcutta.
5-4-26	R	**Mitter,** KUMAR KRISHNA, *Merchant and Landlord.* 14, Ahiritolla Street, Calcutta.
5-3-24	R	**Mitter,** THE HON'BLE SIR PROVASH CHANDRA, KT., C.I.E., M.L.C. 34/1, Elgin Road, Calcutta.
4-3-25	R	**Mitter,** PROFULLA CHANDRA, M.A. (CAL.), PH.D. (BERLIN), *Sir Rash Behary Ghosh Professor of Chemistry, Calcutta University.* 22, Garpar Road, Calcutta.
1-11-26	R	**Modi,** JAL R. K., B.A. 4, Camac Street. Calcutta.

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1-4-25	A	**Mohomed,** Ismail Abdullah, *Merchant.* 21, Amratolla Lane, Calcutta.
3-1-27	N	**Mohammed,** Ghulam, M.A., LL.B., *Indian Audit and Account Service.* Officer on Special Duty with the Railway Board, Delhi.
5-7-26	N	**Moin** Yar Jung Bahadur, Nawab "Musaud Manzil," Lallageoda, Hyderabad, Deccan.
7-5-28	N	**Moledina,** Mohamed Hashimi, *Landlord and Merchant.* 30, Main Street, Camp Poona.
2-5-23	R	**Möller,** H. P., *Merchant.* 18, Ballygunge Circular Road, Calcutta.
6-8-24	N	**Moloney,** William J., *General Manager of Reuter's for the East.* c/o 26/7, Dalhousie Square, Calcutta.
2-4-28	R	**Mookerjea,** Bhabadeb, *Merchant.* 48, Barrackpore Trunk Road, P. O. Baranagore.
1-3-26	R	**Mookerjee,** Aditya Nath, M.A., PH.D., *Principal, Sanskrit College.* 10/B, Mohun Lal Street, Shambazar, Calcutta.
5-11-24	R	**Mookerjee,** B. N., B.A. (Cantab.), *Engineer.* 6 & 7, Clive Street, Calcutta.
3-12-24	R	**Mookerjee,** J. N., *Civil Engineer.* 6 & 7, Clive Street, Calcutta.
7-5-28	R	**Mookerjee,** Kumud Bandhob, *Merchant and Zemindar.* Champdany, Baidyabati.
3-12-24	R	**Mookerjee,** Priyanath, Rai Bahadur, M.A., I.S.O., *Late Inspector-General of Registration, Bengal.* 30, Harrison Road, Calcutta.
1-3-26	R	**Mookerjee,** Satish Chandra, *Barrister-at-Law.* 7, Ballygunge Circular Road, Calcutta.
3-5-98	R	**Mookerjee,** Sir Rajendra Nath, K.C.I.E., K.C.V.O. 7, Harington Street, Calcutta.
2-7-24	R	**Mookerjee,** Syama Prasad, M.A., B.L., *Vakil, High Court, Fellow of the University of Calcutta.* 77, Russa Road North, Calcutta.
29-9-99	R	**Mukerjee,** Jatindra Nath, B.A., *Solicitor.* 4, Hastings Street, Calcutta.
2-8-26	R	**Mukerjee,** Jnanendra Nath, D.Sc. (London), F.C.S. (London), *Fellow of the Indian Chemical Society; Guruprasad Professor of Chemistry, University of Calcutta.* 92, Upper Circular Road, Calcutta.
2-2-21	N	**Mukerjee,** Subodh Chandra, Shastri, M.A., Docteur-es-Lettres (Paris) Office of the Government Examiner of Accounts, B.N.W. Ry., Gorakhpur.
5-12-27	R	**Mukerjee,** Susil Kumar, F.R.C.S. (Edin.), D.O (Oxon.), D.O.M.S. (Lond.), *Ophthalmic Surgeon, Carmichael Medical College Hospitals.* 13, Kyd Street, Calcutta.
4-6-28	R	**Mukerji,** Monmatha Nath, B.E., *Engineer and Architect.* 173, Raja Dinendra Street, Calcutta.
6-2-28	R	**Mukerji,** Manmatha Nath, M.A., B.L., *Judge, High Court.* 8/1, Harsi Street, Calcutta.
5-3-24	R	**Mukerji,** S., M.A., B.L., *Vakil and Zemindar.* 7, Old Ballygunge Road, Calcutta.
7-2-27	R	**Mukherjee,** Harendra Nath, B.Sc., M.B. (Cal.), D.I.C. (Lond.). *Medical Practitioner.* Biochemical Department, Carmichael Medical College, Belgachia, Calcutta.
7-11-27	N	**Mukherjee,** Devaprosanna, M.A., B.L., *Zemindar.* Burdwan.
5-3-24	R	**Mukherjee,** Narendra Nath, B.A. (Cal.), *Publisher.* 31, Central Avenue, Calcutta.

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5-2-08	R	***Mukhopadhyaya,** GIRINDRA NATH, BHISAGACHARYA, B.A., M.D., F.A.S.B. 156, Haris Mukerjee Road (North), Bhowanipur, Calcutta.
5-7-26	R	**Mukhopadhyaya,** PRABHAT KUMAR, M.A., *Research Assistant, Calcutta University.* 27, Govinda Ghosal Lane, Bhawanipur, Calcutta.
2-2-21	R	**Mukhopadhyaya,** THE HON'BLE RAMAPRASAD, M.A., B.L. 77, Russa Road North, Bhowanipore, Calcutta.
2-4-28	R	**Mullick,** KARTICK CHURN. KUMAR, *Director, Raja D. N. Mullick & Sons, Ltd.* Colootola Rajbati, Chittaranjan Avenue, Calcutta.
7-5-28	N	**Murray,** EUGENE FLORIAN OLIPHANT, *Mining Engineer.* Tatanagar, B. N. Ry.
4-1-26	N	**Murray,** HOWARD, C.I.E., LT.-COL., INDIAN ARMY, *Deputy Financial Adviser, Army Head-quarters.* Flashman's Hotel, Rawalpindi.
3-6-25	N	**Musa,** MUHAMMAD, MOULVI, KHAN BAHADUR, M.A., *Principal, Chittagong Madrasah.* Madrasah Hill, Chittagong.
1-6-21	N	**Muzammil-Ullah Khan,** MOHD., HON'BLE NAWAB, KHAN BAHADUR, O.B.E., *Rais.* Bhikanpur, Dist. Aligarh, U.P.
6-12-26	R	**Nag,** KALIDAS, M.A. (CAL.), D.LITT. (PARIS). *Lecturer in Ancient Indian History and Culture, Calcutta University.* P-283, Darga Road, off Park Circus, Calcutta.
5-11-28	R	**Nag,** (MISS) SHANTI. 3, Ashutosh Mukerjee Road, Elgin Road, Calcutta.
7-3-06	N	**Nahar,** PURAN CHAND, RAI BAHADUR, *Solicitor.* c/o 48, Indian Mirror Street, Calcutta.
5-12-27	L	**Namgyal,** H.H. MAHARAJA SIR TASHI, K.C.I.E., *Maharaja of Sikkim.* Gangtok, Sikkim.
6-6-27	N	**Nandi,** MAHARAJ-KUMAR SRIS CHANDRA, M.A., M.L.C., *Zemindar.* Kasimbazar Rajbari, Kasimbazar, Murshidabad.
7-3-23	R	**Nandi,** P., M.D. (CAL.), *Professor of Pharmacology, Carmichael Medical College.* 34/1, Beadon Street, Calcutta.
4-6-28	L	**Nandy,** MAHARAJAH SIR MANINDRA CHANDRA, K.C.I.E., *Zemindar, Chairman, District Board, Murshidabad.* Kasimbazar, Murshidabad.
4-6-28	N	**Narasimham,** YECHURI, M.A., *Dewan, Vizianagram Samsthanam.* Vizianagram.
25-9-18	N	**Narayan,** VICTOR NITYENDRA, *Maharaj Kumar of Cooch Behar.* Cooch Behar.
7-12-26	R	**Narayanaswami,** V., M.A. Royal Botanical Garden, Sibpur, Howrah.
5-7-16	R	**Naseer Hosein Khayal,** NAWAB SYED. 78, Prinsep Street, Calcutta.
5-3-28	R	**Neogi,** PUNCHANAN, M.A., PH.D., I.E.S., *Professor of Chemistry, Presidency College.* 21, Kundu Lane, Belgachia, Calcutta.
3-12-24	N	**Newman,** CHAS F., F.R.G.S., M.C.P. Kutcha Bungalow, Bhopal, C.I.
4-1-26	N	**Nomani,** HAMID H., MAWLAVI, M.A., *Deputy Collector.* Midnapore.
6-8-24	N	**Nyss,** WM. B. S., *Superintendent, Excise and Salt.* Berhampur, Bengal, Dt. Murshidabad.
2-8-26	N	**Oak,** MADHAVA RAMCHANDRA, M.A., *Professor of Philosophy and English Literature, Maharaja's College.* Jaipur, Rajputana.

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Date of Election.		
1-4-25	A	**Oaten,** EDWARD FARLEY, M.A., LL.B. (CANTAB.), I.E.S., *Director of Public Instruction, Bengal.* England.
7-4-15	F	**Ohtani,** COUNT KOZUI. San-ya-so, Edomachi, Fushimi, Kyoto, Japan.
5-11-28	R	**Olpadvala,** E. S. 1, Corporation Street, Calcutta.
2-11-25	R	**Ormond,** ERNEST CHARLES, *Barrister-at-Law.* Bar Library, High Court, Calcutta.
6-6-23	A	**Ottens,** NICHOLAS, B.SC. 15, Clive Row, Calcutta.
7-6-26	A	**Outhwaite,** H. A., *Statistical Officer, E.B. Ry.* 18, Galstaun Mansion, Park Street, Calcutta.
5-12-23	N	**Pande,** SHIVA BANDHAN. *Retired Tahsildar and Zemindar.* Ramaipatti, Mirzapur, U.P.
5-4-26	N	**Parker,** RICHARD HENRY, I.C.S., *late Scholar of St. John's College, Oxford; Under Secretary to the A.G.G., Rajputana.* Mount Abu, Rajputana.
5-11-19	R	***Pascoe,** SIR EDWIN HALL, KT., M.A., SC.D. (CANTAB.), D.SC. (LOND.), F.G.S., F.A.S.B., *Director, Geological Survey of India.* Indian Museum, Calcutta.
5-12-27	A	**Peddie,** JAMES, *Indian Civil Service, Collector.* England.
6-6-88	L	**Pennell,** AUBRAY PERCIVAL, B.A., *Barrister-at-Law.* Lamb's Building, Temple, London, E.C. 4.
1-4-25	R	**Perier,** FERDINAND, S.J., *the Most Reverend Archbishop of Calcutta.* 32, Park Street, Calcutta.
6-11-89	L	***Phillot,** DOUGLAS CRAVEN, LT.-COL., M.A., PH.D., M.R.A.S., F.A.S.B., *Indian Army (Retired).* Felsted, Essex, England.
6-2-28	F	**Piddington,** A.B., *Judge, President, Industrial Commission of New South Wales.* Sydney, Australia.
1-6-04	A	***Pilgrim,** GUY E., D.SC., F.G.S., F.A.S.B. Geological Survey of India, Indian Museum, Calcutta.
5-3-28	A	**Plessen,** BARON LEOPOLD, *Acting Consul-General for Germany.* 2, Store Road, Ballygunge, Calcutta.
4-3-25	A	**Pochhammer,** WILHELM VON, *Secretary to German Embassy.* Tokio, Japan.
4-3-25	R	**Poddar,** HANUMAN PRASAD, *Banker and Commission Agent.* 10A, Central Avenue (South), Calcutta.
3-4-18	R	***Prashad,** BAINI, D.SC., F.Z.S., F.R.S.E., F.A.S.B. Zoological Survey of India, Indian Museum, Calcutta.
3-8-25	R	**Pruthi,** HEM SINGH, *Assistant Superintendent, Zoological Survey of India.* Indian Museum, Calcutta.
1-11-26	N	**Pugh,** LEWIS PUGH EVANS, B.A. (OXON.), *Barrister-at-Law.* Patna High Court, Patna.
2-1-28	N	**Puri,** I. M., PH.D. (CANTAB.), M.SC. (PUNJAB). Central Research Institute, Kasauli, Punjab.
3-12-24	R	**Pushong,** E. S., M.D., L.S.A., *Medical Practitioner.* 1, Wood Street, Calcutta.
6-2-28	R	**Rafique,** MOHAMAD, M.L.A. 19, Zakariah Street, Calcutta.
5-11-28	R	**Rahman,** NAWABZADA A. S. M. LATIFUR, M.A. (CANTAB.), BARRISTER-AT-LAW, *Judge, Presidency Court of Small Causes.* 10, Turner Street, Calcutta.
7-4-80	N	**Rai,** BEPIN CHANDRA. Giridih, Chota Nagpur.
6-2-28	N	**Rai,** LAKSHMI NARAIN, L.M.S. (CALCUTTA), *Civil Assistant Surgeon.* Benares.
1-2-22	R	***Raman,** CHANDRASEKHARA VENKATA, M.A., D.SC., F.R.S., F.A.S.B. 210, Bowbazar Street, Calcutta.

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1-11-26	N	**Ramanujaswami**, P. V., M.A., *Vice-Principal.* Maharaja's Sanskrit College, Vizianagaram.
4-1-05	A	**Rankin**, JAMES THOMAS, I.C.S., *Commissioner.* England.
7-3-27	R	**Rankin**, THE HON'BLE SIR GEORGE, KT., *Chief Justice of Bengal.* 9, Camac Street, Calcutta.
3-12-24	R	**Rao**, H. SRINIVASA, *Assistant Superintendent, Zoological Survey of India.* Indian Museum, Calcutta.
6-5-25	R	**Rao**, M. VINAYAK, RAO BAHADUR, B.A., F.G.S., *Assistant Superintendent, Geological Survey of India.* Indian Museum, Calcutta.
1-2-26	N	**Rao**, T. RAMACHANDRA, RAO SAHIB, *Officiating Government Entomologist.* Lawley Road, Coimbatore.
1-11-26	N	**Rao**, WUPPALA LAKSHMANA, M.A., B.SC., DR-RER-NAT. Digumarti House, Berhampore, Ganjam.
3-4-18	N	**Ratnakar**, JAGANNATH DAS, B.A., KAVISUDHAKAR. Shivalaghat, Benares City.
6-12-26	N	**Rau**, A. SUBBA. Medical College, Bangalore.
1-11-26	R	**Rau**, S. SETHU RAMA, RAO BAHADUR, B.A., F.G.S. Geological Survey of India, Indian Museum, Calcutta.
2-7-24	N	**Ray**, ABINASH CHANDRA, B.A. R. M. H. E. School, P. O. Deoghar, E.I.R.
2-7-24	R	**Ray**, BHABENDRA CHANDRA, *Zemindar.* 6, Short Street, Calcutta.
7-9-10	R	**Ray**, KUMAR SARAT KUMAR, M.A., M.R.A.S. 52, Police Hospital Road, Entally, Calcutta.
5-1-21	N	**Ray**, JAGADISNATH, MAHARAJA, *Maharaja of Dinajpore.* Dinajpore.
5-3-90	R	***Ray**, SIR PROFULLA CHANDRA, KT., C.I.E., D.SC., F.A.S.B. University College of Science, 92, Upper Circular Road, Calcutta.
3-3-20	R	**Raye**, NARENDRA NATH, M.A., *Principal.* Ripon College, Calcutta.
5-11-28	L	**Reinhart**, WERNER, *Merchant.* c/o Messrs. Volkart Bros. Rychenberg, Winterthur, Switzerland.
6-2-28	R	**Reneman**, NICO. 52/1, Ballygunge Circular Road, Calcutta.
3-8-25	N	**Reuben**, DAVID EZRA, I.C.S. Judge's House, Cuttack, B. N. Ry.
2-4-24	F	**Richards**, F. J., I.C.S. 6, Lexham Gardens, London, W. 8.
3-4-18	F	**Robinson**, HERBERT C., 142, Duke's House, St. James Court, Buckingham Gate, London, S.W. 1.
3-12-24	L	**Roerich**, GEORGE NICHOLAS, M.A., M.R.A.S., *Orientalist.* 310, Riverside Drive, New York, U.S.A.
2-7-28	L	**Roerich**, NICHOLAS, *Professor, Honorary President, Master Institute of United Arts, New York, U.S.A., Artist-Painter.* 310, Riverside Drive, New York, U.S.A.
3-12-24	N	**Rogers**, T. E., *Tea Planter.* Nagadhoolie Tea Estate, Mariani, Assam.
3-3-20	A	**Ronaldshay**, THE EARL OF. England.
7-5-24	R	**Rose**, G. F., *Director, Messrs. Andrew Yule & Co., Ltd.* 8, Clive Row, Calcutta.
4-12-01	F	***Ross**, SIR EDWARD DENISON, KT., C.I.E., PH.D., F.A.S.B., *Director, School of Oriental Studies.* Finsbury Circus, London, E.C.2.
2-1-28	N	**Row**, R., M.D., D.SC. (LOND.), *Professor of Pathology, Grant Medical College.* 27, New Marine Lines, Fort, Bombay.
3-7-18	R	**Roy**, BIDHAN CHANDRA, B.A. (CAL.), M.D., F.R.C.S., M.R.C.P. (LOND.). 36, Wellington Street, Calcutta.

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7-9-21	A	**Roy**, HEM CHANDRA. England.
3-12-24	A	**Roy**, P. L., *Barrister-at-Law.* England.
5-2-19	R	**Roy**, SASADHAR. 48/1, Chaulpatty Road, Bhawanipur, Calcutta.
2-4-28	N	**Roy**, SUHRID KUMAR, PH.D., *Professor of Geology, Indian School of Mines.* Dhanbad.
7-7-20	R	**Roy-Chaudhuri**, HEM CHANDRA, M.A., PH.D. 28, Gopal Bose Lane, Jhamapukur, Calcutta.
6-8-24	R	**Roy-Chowdhury**, BRAJENDRA KISHORE, *Zemindar*, 53, Sukea Street, Calcutta.
1-2-26	N	**Ruthnaswamy**, M., M.A., Barrister-at-Law. *Principal, Law College.* Esplanade, Madras.
1-4-25	R	**Sadiq**, SYED MOHAMMAD, *Unani Physician.* 11, Harin Bari 1st Lane, Calcutta.
7-5-28	N	**Saha**, MEGH NAD, D.SC., F.R.S., *Professor of Physics, University of Allahabad.* Katra, Allahabad.
5-11-24	N	***Sahni**, B., D.SC., F.A.S.B. *Professor of Botany.* The University, Lucknow.
2-11-25	R	**Sanaullah**, MUHAMMAD, M.A., *Professor of Arabic and Persian, Presidency College.* 16, Hyat Khan Lane, Sealdah, Calcutta.
5-2-19	N	**Sarfraz**, SHEIKH ABDUL KADER, M.A. Deccan College, Poona.
3-12-24	R	**Sarkar**, C. K., C.E., *Engineer and Architect.* 10, Hastings Street, Calcutta.
1-11-22	N	**Sarkar**, SURESH CHANDRA, *Dy. Magistrate and Dy. Collector.* Barganda, Giridih.
2-1-28	N	**Sarkar**, SARASI LAL, *Civil Surgeon.* Sonarpur P.O., Noakhali.
7-3-27	R	**Sarma**, SIR B. NARASIMHA, K.C.S.I., *President, Railway Rates Advisory Committee.* 24/1, Ballygunge Circular Road, Calcutta.
3-3-09	R	**Sarvadhikary**, SIR DEVAPRASAD, KT., C.I.E., O.B.E., C.B.E., M.A., B.L., F.C.U., LL.D. (ABERDEEN), LL.D. (ST. ANDREWS), SURIRATNA, VIDYARATNAKAR, JNANASINDHU. 20, Suri Lane, Entally, Calcutta.
7-5-28	N	**Sastri**, HIRANANDA, M.A., M.O.L., D. LITT., *Government Epigraphist for India.* Baikie House, Ootacamund, Nilgiris.
2-4-28	R	**Sen**, BENOY KUMAR, M.A., *Professor of History, Presidency College.* 3/1A, Chidam Mudy Lane, Calcutta.
1-4-25	R	**Sen**, BENOY CHANDRA, M.A., *Professor of History, City College.* 7, Bishwakosh Lane, Baghbazar, Calcutta.
3-12-24	R	**Sen**, H. K., M.A., D.SC. (LONDON), D.I.C., *Professor of Chemistry, University College of Science.* 92, Upper Circular Road, Calcutta.
7-5-02	R	**Sen**, JOGINDRANATH, M.A., VIDYARATNA, VIDYABHUSAN. 32, Prasanna Kumar Tagore Street, Calcutta.
5-12-23	L	**Sen**, LAKSHMAN, H.H. RAJA OF SUKET. Suket State, Punjab.
5-4-26	R	**Senior-White**, RONALD, F.E.S., F.R.S.T.M. & H., *Malariologist.* B. N. Ry. House, Kidderpore, Calcutta.
1-12-97	R	**Seth**, MESROVB JACOB, M.R.A.S., M.S.A., F.R.S.A., *Examiner in Classical Armenian to the Calcutta University.* 13, Elliott Road, Calcutta.
1-2-26	R	**Setna**, S. B., M.SC., *Lecturer.* The Royal Institute of Science, Bombay.

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5-7-11	L	***Sewell,** ROBERT BERESFORD SEYMOUR, M.A., M.R.C.S., L.R.C.P., F.Z.S., F.L.S., F.A.S.B., LT.-COL., I.M.S. Indian Museum, Calcutta.
5-3-28	R	**Shaha,** BRAJABULLAV, M.B., D.T.M., *Medical Practitioner.* 45A, Sovabazar Street, Calcutta.
7-2-23	R	**Shanks,** GEORGE, MAJOR, I.M.S., *Professor of Pathology.* Medical College, Calcutta.
2-11-25	R	**Sharif,** MOHAMMAD, M.SC., F.R.M.S. Zoological Survey of India, Indian Museum, Calcutta.
4-2-85	L	***Shāstrī,** HARAPRASAD, MAHĀMAHOPĀDHYĀYA, C.I.E., M.A., D.LITT., F.A.S.B., HON. MEMBER, R.A.S. 26, Pataldanga Street, Calcutta.
2-4-28	A	**Shaw,** EDWARD BRIAN, M.A. (CAMBRIDGE), I.C.S. Nowgong, Assam.
2-5-23	N	**Shebbeare,** E. O. Conservator of Forests., Darjeeling.
6-1-09	N	**Shirreff,** ALEXANDER GRIERSON, B.A., I.C.S. Sitapur, U.P.
4-1-26	R	**Shortt,** H. E., MAJOR, I.M.S., *Director, Kala-azar Commission.* Golaghat, Assam.
6-2-28	L	**Shumsher** JUNG BAHADUR RANA, SIR KAISER, K.B.E., SUPRADIPTA MANYAVARA, LIEUT.-GENERAL, Nepalese Army. Kaiser Mahal, Kathmandu, Nepal.
5-2-02	N	**Shyam Lal,** LALA, M.A., LL.B. Nawabganj, Cawnpore, U.P.
3-12-24	N	**Siddiqi,** A., M.A. (ALLAHABAD), PH.D. (GÖTTINGEN), *Professor of Arabic and Islamic Studies.* University of Allahabad, Allahabad.
5-3-13	L	***Simonsen,** JOHN LIONEL, D.SC., F.I.C., F.A.S.B. 16/36, Buckingham Gate, London, S.W.I.
6-2-18	N	**Singh,** BADAKAJI MARICHI MAN. 38, Khichapokhari, Kathmandu, Nepal.
6-12-26	R	**Singh,** BAWA RAMNIK, RAI BAHADUR, *Civil Engineer, E.B. Ry.* 3, Koilaghat Street, Calcutta.
29-8-99	N	**Singh,** SIR PRABHU NARAIN, H.H. THE MAHARAJA BAHADUR, G.C.I.E., G.C.S.I., *Maharaja of Benares.* Ramnagar Fort, Benares.
7-4-09	N	**Singh,** PRITHWIPAL, RAJA, F.R.G.S., F.R.S.A., F.T.S., *Talukdar of Surajpur.* Chandrahas Palace, Hathaunda, Barabanki, Oudh.
6-12-26	N	**Singh,** RAM, *Executive Engineer, E.B. Ry.* Ruhea Construction, Dinajpur, E.B. Ry.
6-11-99	L	**Singh,** SIR RAMESHWAR, H.H. THE HON'BLE MAHARAJADHIRAJA, G.C.I.E., K.B.E., D.LITT., F.R.A.S., F.P.U. Darbhanga.
7-2-94	N	**Singh,** VISHWA NATH, H.H. THE MAHARAJA BAHADUR. Chhatturpur, Bundelkhund.
3-6-25	R	**Singhania,** PARSHOTAMDAS, *Merchant.* 3-1, Mangoe Lane, Calcutta.
5-9-12	N	**Singhi,** BAHADUR SINGH. Azimganj, Murshidabad.
3-4-18	N	**Sinha,** BHUPENDRA NARAYAN, RAJA BAHADUR, B.A. Nashipur Rajbati, Nashipur.
1-2-22	R	**Sinha,** KUMAR GANGANANDA, M.A., *Zemindar.* 16, Chandra Chatterji Street, Bhowanipore, Calcutta.
7-5-28	F	**Sinha,** LORD OF RAIPUR. Queen Anne Mansions, St. James Park, London.
4-3-25	R	**Sinha,** PURNA CHANDRA, *Landholder.* 146, Baranoshi Ghosh Street, Jorasanko, Calcutta.
2-7-13	N	**Sinha,** RUDRA DATTA, M.A., LL.B., M.R.A.S. Nazirabad Road, Lucknow.

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6-6-27	N	**Sinha,** SHEONANDAN PRASAD, M.B., *Assistant Surgeon.* Chatra, Dt. Hazaribagh.
6-2-28	R	**Sinha,** SUHRID CHANDRA, KUMAR, M.SC. 15/1/1, Ramakanto Bose Street, Bagh Bazar, Calcutta.
4-1-26	N	**Sinton,** J. A., O.B.E., Major, I.M.S., V.C., *Officer-in-Charge, Malaria Bureau.* Central Research Institute, Kasauli.
5-7-16	R	**Sircar,** GANAPATI, VIDYARATNA. 69, Beliaghatta Main Road, Calcutta.
5-3-24	R	**Sircar,** N. N., M.A., B.L., *Barrister-at-Law.* 36/1, Elgin Road, Calcutta.
5-3-24	R	**Sircar,** SIR NIL RATAN, KT., M.A., M.D., *Physician.* 7, Short Street, Calcutta.
2-6-20	R	**Skinner,** S. A., *Engineer and Director, Messrs. Jessop & Co., Ltd.* 93, Clive Street, Calcutta.
1-3-26	R	**Snaith,** JOHN FRANK, *Managing Director, Messrs. Hamilton & Co.* 8, Old Court House Street, Calcutta.
2-8-26	R	**Sohoni,** VISHVANATH VISHNU, B.A., B.SC., *Meteorologist.* The Observatory, Alipore, Calcutta.
5-4-26	N	**Sondhi,** GAUTAM. 6, Kacheri Road, Lahore.
7-3-27	R	**Stagg,** M., MAJOR, R.E., O.B.E., *Master, H.M.'s Mint.* Strand Road, Calcutta.
7-3-23	F	**Stamp,** L. DUDLEY, B.A., D.SC. University of London, London School of Economics, Houghton Street, London, W.C. 2.
6-6-27	R	**Staples,** EDWARD HENRY, *Broker.* 3, Auckland Place, Calcutta.
4-1-26	R	**Stapleton,** GRACE (MISS), M.D., B.S. (LONDON), *Superintendent.* Dufferin Hospital, Calcutta.
28-9-04	L	***Stapleton,** HENRY ERNEST, M.A., B.SC., I.E.S., F.A.S.B. *Offg. Director of Public Instruction, Bengal.* 8, Galstaun Mansions, Calcutta.
7-12-25	A	**Stark,** LEONARDUS, *Banker.* c/o Netherlands India Commercial Bank, Dalhousie Square, Calcutta.
5-11-28	N	**Statham,** R. M., *Indian Educational Service, Secretary, Education Committee of the Indian Statutory Commission* Madras Club, Madras.
6-5-25	R	**Staub,** MAX, *Consul for Switzerland.* 100, Clive Street, Calcutta.
2-12-08	R	**Steen,** HUGH BERKELEY, M.D., LT.-COL., I.M.S. *Professor of Surgery, Medical College.* Calcutta.
2-11-25	N	**Stocks,** C. DE BEAUVOIR, (MRS.). c/o Postmaster, Kalimpong.
1-8-23	A	**Stow,** ALEXANDER MONTAGU, O.B.E., M.A. (CANTAB.), I.C.S. Chief Commissioner, Delhi.
1-11-22	R	**Strickland-Anderson,** (MRS.). 1, Alipur Park, Calcutta.
5-6-07	R	***Suhrawardy,** ABDULLAH AL-MA'MUN, IFTIKHARUL MILLAT, M.A., *Barrister-at-Law,* D.LITT., LL.D., F.A.S.B. 56, Mirzapur Street, Calcutta.
7-6-20	R	**Suhrawardy,** HASSAN, MAJOR, M.D., F.R.C.S., I.T.F.M.C., *Chief Medical Officer, E.B. Ry.* 2, Belvedere Park, Alipur, Calcutta.
4-4-27	R	**Suhrawardy,** SIR Z. R. Z., KT., *Judge, High Court.* 3, Wellesley 1st Lane, Calcutta.
3-3-20	N	**Sundararaj,** BUNGURU, M.A., PH.D., *Director of Fisheries.* Madras.
4-1-26	R	**Sur,** S. N., M.B., D.P.H., D.T.M. Assistant Director of Public Health, Writers' Buildings, Calcutta.

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2-7-28	R	**Tagore,** RANENDRA MOHON, *Zemindar.* 6, Alipore Park Road East, Calcutta.
6-4-98	R	**Tagore,** SIR PRADYOT COOMAR, KT., MAHARAJA BAHADUR. Pathuriaghatta, Calcutta.
6-7-04	A	**Talbot,** WALTER STANLEY, C.I.E., I.C.S. (*retired*). Glenhurst Esher, Surrey, England.
1-4-25	R	**Taraporewala,** IRACH J. S., B.A., PH.D., *Barrister-at-Law, Professor of Comparative Philology, University of Calcutta.* 77-9, Dharamtola Street, Calcutta.
7-11-27	R	**Tarkatirtha,** BIMALANANDA, *Kabiraj, Punditbhusan, Byakaranatirtha.* 90/3, Grey Street, Calcutta.
31-8-93	L	**Tate,** GEORGE PASSMAN. 56, Cantonment, Bareilly, U.P.
5-6-78	F	*__Temple,__ SIR RICHARD CARNAC, BART., C.B., C.I.E., F.B.A., F.S.A., F.A.S.B., *Formerly Lieutenant-Colonel, Indian Army.* c/o Lloyds Bank, Ltd., Cox's and King's Branch, 6, Pall Mall, London, S. W.
4-8-09	N	**Thompson,** SIR JOHN PERRONET, K.C.I.E., C.S.I., M.A., I.C.S., *Chief Secretary, Govt. of the Punjab.* United Service Club, Simla.
1-6-04	L	*__Tipper,__ GEORGE HOWLETT, M.A., F.G.S., M.INST.M.M., F.A.S.B. 33, Grantchester, Cambridge, England.
5-12-27	N	**Tritton,** ARTHUR STANLEY, M.A., D.LITT., *Professor.* Muslim University, Aligarh, U.P.
7-5-28	N	**Tucci,** GUISEPPE, PH.D., *Professor of Religions and Philosophy of India and the Far East, University of Rome.* c/o The Italian Consul, 9, Stephen Court, 18/B, Park Street, Calcutta
5-7-26	F	**Tyson,** JOHN DAWSON, I.C.S. *Secretary to the Agent to the Governor-General in South Africa.* Cape Town, S. Africa.
6-5-25	R	**Ukil,** AMULYA CHANDRA, M.B. (CAL.), *Professor of Bacteriology, National Medical Institute, and Assistant Director, Clinical Research Association.* 6/1, Kanklia Road, Ballygunge, Calcutta.
6-8-28	R	**Urchs,** OSWALD, M.D. c/o Messrs. Havero Trading Co., Ld., 15, Clive Street (Post Box 2122), Calcutta.
7-3-27	R	**Urquhart,** REV. W. S., M.A., D.LITT., *Principal, Scottish Churches College.* 3 & 4, Cornwallis Square, Calcutta.
5-11-24	R	**Vaile,** MAURICE ARTHUR STUART, *Exchange Broker, Messrs. Thomas Seth Apcar & Co* 8, Clive Street, Calcutta.
4-7-27	A	**Vance,** R. L., M.B., *Major, Indian Medical Service.* Gyantse, Tibet.
6-7-25	N	**Varma,** SOHAN LAL, *Honorary Magistrate, Banking and Zemindari.* Laharpur, Sitapur District.
7-12-25	N	**Varugis,** GEORGE, B.SC. (WALES). c/o Y.M.C.A., 263, Dalhousie Street, Rangoon.
5-7-05	R	**Vidyabhusana,** AMULYA CHARAN. 28A, Telepara Lane, Calcutta.
6-8-28	R	**Vijver,** RICHARD HUBERTUS VAN DE, *Merchant.* 8, Lee Road, Hastings, Calcutta.
1-2-26	N	**Viswanath,** B., *Fellow, Chemical Society of London; Fellow, Chemical Society of India; Officiating Government Agricultural Chemist.* Lawley Road, Coimbatore.
6-3-01	L	*__Vogel,__ JEAN PHILIPPE, LITT.D., F.A.S.B. The University, Lieden, Holland.
27-9-94	L	**Vost,** WILLIAM, LT.-COL., I.M.S. Leicester Lodge 1, Medina Villas, Hove, Sussex, England.

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Date of Election.		
7-11-27	N	**Vyasa,** Pundit Gauri Sankar Prasad, *Headmaster, M.E. School.* Indargarh Raj.
6-5-25	N	**Wadia,** D. N., M.A., B.Sc., F.R.G.S., F.G.S., *Geological Survey of India.* c/o Indian Museum, Calcutta.
5-3-28	N	**Waight,** Harry George, B.A. (Oxon. and Lond.), F.R.G.S., I.C.S., *Additional District and Sessions Judge, Dacca.* (c/o The Lloyds Bank, Post Box No. 306, Calcutta.)
3-6-25	R	**Walton,** Eric Bell, *Chartered Civil Engineer.* 93, Park Street, Calcutta.
7-3-27	A	**Ward,** Dorothy (Mrs.). c/o J. Dickinson & Co., Ld., P.O. Box No. 45, Calcutta.
2-5-27	R	**Watson,** Alfred Henry, *Journalist.* c/o The "Statesman," Calcutta.
5-3-28	R	**Watling,** R. G., *Indian Police* (*Railway Police*), *E.I. Ry.* 5, Strand Road, Howrah.
2-1-28	N	**Wats,** R. C., Captain, M.D., D.P.H., D.T.M., I.M.S. Mhow, Indore, C.I.
2-7-28	R	**Watson,** Edwin, B.E. (Dublin), Member of Institute of Engineers (India), *Deputy Agent, East Indian Railway.* 27, Theatre Road, Calcutta.
1-11-26	R	**Westcott,** Foss, The Most Reverend, D.D. (Cantab.), Honorary D.D. (Oxon.), *Lord Bishop of Calcutta and Metropolitan of India, Burma and Ceylon.* Bishop's House, 51, Chowringhee, Calcutta.
19-9-06	L	**Whitehead,** Richard Bertram, I.C.S. Rupar, Ambala, Punjab.
6-2-28	N	**Williams,** T. Taliesin, M.A., B.Sc., *Principal, Rajshahi College.* Rajshahi.
6-12-26	F	**Winfield,** Walter Warren, B.A., B.D., *Missionary.* c/o Baptist Missionary Society, 19, Furnival Street, London, E.C. 4, England.
7-3-06	L	***Woolner,** Alfred Cooper, C.I.E., M.A., F.A.S.B. 53, Lawrence Road, Lahore.
1-4-08	R	**Wordsworth,** William Christopher, M.A., I.E.S. (Retd.). c/o The "Statesman," 6, Chowringhee, Calcutta.
2-1-28	A	**Wright,** Gertrude Mariam (Miss). *Indian Educational Service, Principal, Bethune College.* 181, Cornwallis Street, Calcutta.
7-3-27	R	**Wright,** Frederic Maitland, *Broker.* 2-5, Lansdowne Road, Calcutta.
5-2-19	N	**Yazdani,** Ghulam, M.A. Archæological Survey, Hyderabad, Deccan.
6-8-28	R	**Young,** Rev. Arthur Willifer, *Secretary, British and Foreign Bible Society.* 23, Chowringhee, Calcutta.
6-6-06	A	**Young,** Mansel Charles Gambier. Khagaul, Dinapore, E.I. Ry.
4-1-26	N	**Younus,** Muhammad, *Assistant Director-General of Police, H.E.H. the Nizam's Government.* Saifabad, Hyderabad (Deccan).
2-4-28	R	**Zachariah,** K., M.A. (Oxon.), I.E.S., *Professor of History, Presidency College.* 5, Store Road, Calcutta.

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ORDINARY MEMBERS.

(*Chronological.*)

1873.			
Jan.	2.	Houstoun, G. L.	
1878.			
June	5.	Temple, Sir R. C.	
1880.			
April	7.	Rai, B. C.	
1884.			
Sept.	3.	Miles, W. H.	
Nov.	5.	Middlemiss, C. S.	
1885.			
Feb.	4.	Shastri, Haraprasad	
1886.			
Mar.	3.	Mehta, R. D.	
1887.			
Aug.	25.	Criper, W. R.	
1888.			
June	6.	Pennell, A. P.	
1889.			
Mar.	6.	La Touche, T. H. D.	
Nov.	6.	Phillott, D. C.	
1890.			
Mar.	5.	Ray, Sir Prafulla C.	
1892.			
Jan.	11.	Maclagan, Sir Edward D.	
Feb.	1.	Bodding, P. O.	
1893.			
Aug.	31.	Tate, G. Passman	
Sept.	28.	Chaudhuri, B. L.	
1894.			
Feb.	7.	Singh, H.H. Vishwa Nath	
Sept.	27.	Vost, W.	
1895.			
Mar.	6.	Bose, Sir Jagadis C.	
July	3.	Beatson-Bell, Sir Nicholas D.	
Sept.	19.	De, K. C.	
1896.			
Jan.	8.	Burn, Sir Richard	
1897.			
Dec.	1.	Seth, M. J.	
1898.			
Jan.	5.	Dods, W. K.	
Feb.	2.	Bose, A. L.	
April	6.	Tagore, Sir Pradyot C.	
May	4.	Mookerjee, Sir R. N.	
1899.			
Aug.	29.	Singh, Sir Prabhu Narain	
Sept.	29.	Mukerjee, J. N.	
Nov.	6.	Singh, Sir Rameshwara	30
1900.			
Dec.	5.	Grieve, J. W. A.	
1901.			
Mar.	6.	Khan, H. R.	
,,	,,	Vogel, J. P.	
June	5.	Mann, H. H.	
Dec.	4.	Ross, Sir Edward D.	35
1902.			
Feb.	5.	Shyam Lal.	
May.	7.	Sen, J. N.	
July	2.	Doxey, F.	
1904.			
June	1.	Pilgrim, G. E.	
,,	,,	Tipper, G. H.	40
July	6.	Aulad Hasan.	
,,	,,	Talbot, W. S.	
Aug.	3.	Fermor, L. L.	
,,	,,	Stapleton, H. E.	
1905.			
Jan.	4.	Rankin, J. T.	45
Mar.	1.	Banerji, M.	
May	3.	Graves, H. G.	
July	5.	Ghosh, A. C.	
Aug.	2.	McCay, D.	
1906.			
Jan.	3.	Chapman, J. A.	50
Mar.	7.	Nahar, P. C.	
,,	,,	Woolner, A. C.	
June	6.	Mitra, M. N.	
,,	,,	Young, M. C. G.	
Sept.	19.	Whitehead, R. B.	55
Oct.	31.	Finlow, R. S.	
Dec.	5.	Mahalanobis, S. C.	
1907.			
Jan.	2.	Banerji, R. D.	
June	5.	Suhrawardy, A. A.	
July	3.	Brown, J. C.	60
,,	,,	Christie, W. A. K.	
Aug.	7.	Haines, H. H.	
1908.			
Jan.	1.	Brahmachari, U. N.	
Feb.	5.	Mukhopadhyaya, G. N.	
April	1.	Wordsworth, W. C.	65
June	3.	Jones, H. C.	
Nov.	4.	Bhattacharji, B.	
Dec.	2.	Steen, H. B.	

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1909.
Jan. 6. Shirreff, A. G.
Mar. 3. Abdul Latif.
,, ,, Chakravarti, N.
,, ,, Sarvadhikary, Sir D. P.
April 7. Benfley, C. A.
,, ,, Kilner, J. N.
,, ,, Singh, P.
July 7. Bazaz, R. K.
,, ,, Bhattacharji, S. N.
Aug. 4. Thompson, Sir J. P.
Oct. 6. Brown, P.
,, ,, Brühl, P.
,, 7. Gangoli, O. C.
Nov. 3. Christophers, S. R.

1910.
May 4. Dhavle, S. B.
,, ,, Kemp, S. W.
July 6. Botham, A. W.
Sept. 7. Gravely, F. H.
,, ,, Ray, S. K.

1911.
Feb. 1. Insch, J.
,, ,, Law, N. N.
Mar. 1. Mahtab, Sir Bijay Chand
May 3. Lomax, C. E.
June 7. Chatterjee, K. K.
,, ,, Hosain, M. H.
July 5. Sewell, R. B. S.
Nov. 1. Ahmed, K.
,, ,, Esch, V. J.

1912.
Jan. 10. Kazim Shirazi, A. M.
May 1. Harley, A. H.
June 5. Misra, C.
July 3. Andrews, E. A.
,, ,, Bomford, T. L.
Sept. 4. Ghosh, T.
,, ,, Singhi, B. S.

1913.
Mar. 5. Simonsen, J. L.
April 2. Calder, C. C.
June 4. Majumdar, R. C.
July 2. Sinha, R.
Nov. 5. Fox, C. S.

1914.
Feb. 4. Chaudhuri, S. N. A.
Mar. 4. Bacot, J.
April 1. Chaudhuri, G. D.
July 1. Law, S. C.
Aug. 5. Law, B. C.

1915.
Feb. 3. Khan, H. A. A.
April 7. Belvalkar, S. K.
April 7. Ohtani, Count K.
Aug. 4. Gurner, C. W.
Sept. 1. Cleghorn, M. L. W.
,, ,, Das-Gupta, H. C.
Oct. 27. Chatterjee, Sir A. C.

1916.
Feb. 2. Majumdar, N. K.
June 7. Mahajan, S. P.
July 5. Khayal, N. H.
,, ,, Sarkar, G.

1917.
April 4. Awati, P. R.
June 6. Deb, H. K.
,, ,, Aiyangar, K. V. R.
Aug. 1. Bhandarkar, D. R.

1918.
Feb. 6. Banerji, N. N.
,, ,, Ghosh, E. N.
,, ,, Maitra, S. K.
,, ,, Manen, Johan van
,, ,, Singh, B. M.
April 3. Das, J. R.
,, ,, Prashad, B.
,, ,, Robinson, H. C.
,, ,, Sinha, B. N.
July 3. Roy, B. C.
,, ,, Basu, C. C.
Aug. 7. Maitra, J. N.
Sept. 25. Narayan, V. N.

1919.
Feb. 5. Sarfraz, A. K.
,, ,, Ray, S.
,, ,, Yazdani, G.
Mar. 5. Gupta, S. P.
April 2. Bal, S. N.
,, ,, Friel, R.
June 4. Matthai, G.
July 2. Banerji, P.
Oct. 10. Manry, J. C.
Nov. 5. Hemraj, R.
,, ,, Misra, P. N.
,, ,, Pascoe, Sir E. H.

1920.
Jan. 5. Suhrawardy, H.
Feb. 4. Keir, W. I.
,, ,, Brij Narayan.
Mar. 3. Lahiri, J.
,, ,, Mahalanobis, P. C.
,, ,, Sundara Raj, B.
,, ,, Raye, N. N.
,, ,, Ronaldshay, The Earl of
April 7. Dutt, K. K.
May 5. Ghosh, S. N.
June 2. Majumdar, N. G.
,, ,, Skinner, S. A.

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	July	7.	Knowles, R.	
	,,	,,	Roy-Chaudhuri, H. C.	
	Aug.	4.	Dikshit, K. N.	
	,,	,,	Martin, O.	
170	Sept.	1.	Chakladar, H. C.	
	,,	,,	Chanda, R.	
	,,	,,	Chatterjee, N. C.	
	Dec.	1.	Connor, Sir F. P.	
	,,	,,	Akbar Khan, M.	
	1921.			
175	Jan.	5.	Ray, J.	
	Feb.	2.	Jain, Chhote Lall	
	,,	,,	Mukerjee, R.	
	,,	,,	Mookerjee, S. C.	
	Mar.	2.	Acton, H. W.	
180	,,	,,	Agharkar, S. P.	
	May	4.	Barnardo, F. A. F.	
	June	1.	Muzamilullah Khan, Mohammad	
	Sept.	7.	Deb. P. K.	
	,,	,,	Roy, H. C.	
185	Nov.	2.	Hora, S. L.	
	,,	,,	Huq, S. E.	
	Dec.	7.	Barua, B. M.	
	1922.			
	Feb.	1.	Bhattacharya, V. S.	
	,,	,,	Chopra, R. N.	
190	,,	,,	Megaw, J. W. D.	
	,,	,,	Raman, C. V.	
	,,	,,	Sinha, G.	
	April	5.	Abdul Ali, A. F. M.	
	,,	,,	Banerjee, S.	
195	,,	,,	Bose, J. C.	
	June	,,	Bhattacharya, S. P.	
	Sept.	6.	Das-Gupta, S. N.	
	Nov.	1.	Strickland-Anderson, Mrs.	
	,,	,,	Sarkar, S. C.	
200	Dec.	6.	Blackett, Sir Basil P.	
	1923.			
	Feb.	7.	Barber, C. T.	
	,,	,,	Jinavijayaji, Muni	
	,,	,,	Shanks, G.	
	Mar.	7.	Gupta, N.	
205	,,	,,	Labey, G. T.	
	,,	,,	Nandi, P.	
	,,	,,	Stamp, L. D.	
	April	4.	Alker, A.	
	May	2.	Collenberg, Baron H. R. von	
210	,,	,,	Harnett, W. L.	
	,,	,,	Möller, H. P.	
	,,	,,	Shebbeare, E. O.	
	June	6.	Bhanot, K. D.	
215	,,	,,	Howard, A.	
	,,	,,	Hutton, J. H.	
	,,	,,	Ottens, N.	
	Aug.	1.	Biswas, K. P.	
	Aug.	1.	Stow, A. M.	
	Dec.	5.	Chopra, B. N.	
	,,	,,	Meggitt, F. J.	220
	,,	,,	Barwell, N. F.	
	,,	,,	Jackson, P. S.	
	,,	,,	Korke, V. T.	
	,,	,,	Sen, H. H. Lakshman	
	,,	,,	Pande, S. B.	225
	1924.			
	Feb.	6.	Mahindra, K. C.	
	Mar.	5.	Banerjee, P. N.	
	,,	,,	Browne, H.	
	,,	,,	Fitzpatrick, H.	
	,,	,,	Kanjilal M. N.	230
	,,	,,	Mukerji, S.	
	,,	,,	Martin, T. L.	
	,,	,,	Mitter, Sir P. C.	
	,,	,,	Mitter, Sir B. C.	
	,,	,,	Mitter, Sir B. L.	235
	,,	,,	Mitter, D. N.	
	,,	,,	Mukherjee, N. N.	
	,,	,,	McPherson, J.	
	,,	,,	Greaves, Sir Ewart	
	,,	,,	Chatterji, M. M.	240
	,,	,,	Sircar, N. N.	
	,,	,,	Sircar, Sir N. R.	
	April	2.	Bahl, K. N.	
	,,	,,	Das, B. M.	
	,,	,,	Ghose, K.	245
	,,	,,	Judah, N. J.	
	,,	,,	De, F. L.	
	,,	,,	Richards, F. J.	
	,,	,,	Huq, M.	
	,,	,,	Mitra, J. C.	250
	,,	,,	Ghose, Sir C. C.	
	May	7.	Rose, G. F.	
	,,	,,	Bhattacharya, B.	
	June	4.	Cooper, H.	
	July	2.	Ray, A. C.	255
	,,	,,	Ghose, B. B.	
	,,	,,	Browne, L. E.	
	,,	,,	Iyengar, M. O. P.	
	,,	,,	Mookerjee, S. P.	
	,,	,,	Ray, B. C.	260
	Aug.	6.	Chatterji, S. K.	
	,,	,,	Nyss, Wm. B. S.	
	,,	,,	Moloney, W. J.	
	,,	,,	Roy-Chowdhury, B. K.	
	,,	,,	Davies, L. M.	265
	,,	27.	Chattopadhyay, K. P.	
	,,	,,	Baidil, A. M.	
	,,	,,	MacGregor, A. D.	
	Sept.	24.	Sahni, B.	
	,,	,,	Mookerji, B. N.	270
	,,	,,	Asaduzzaman.	
	Nov.	5.	Vaile, M. A. S.	
	,,	,,	Kapur, S.	
	Dec.	3.	Siddiqi, A.	
	,,	,,	Das, S. N.	275
	,,	,,	Roy, P. L.	

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Dec. 3. Mookerjee, J. N.
,, ,, Newman, Chas. F.
,, ,, Gilbert, W. G. L.
,, ,, Rao, H. S.
,, ,, Pushong, E. S.
,, ,, Rogers, T. E.
,, ,, Basu, J. N.
,, ,, Ghose, S. C.
,, ,, Sarkar, C. K.
,, ,, Chatterjee, S. N.
,, ,, Hendry, C. A.
,, ,, Mukherjee, P. N.
,, ,, Roerich, G. N.
,, ,, Sen, H. K.

1925.
Jan. 7. Banerjee, M. N.
Feb. 4. Bhor, S. C.
,, ,, Bishop, T. H.
,, ,, Dutt, K. C.
,, ,, Guha, B. S.
,, ,, Menon, K. R.
Mar. 4. Benthall, E. C.
,, ,, Bhatnagar, J. L.
,, ,, Buyers, W. A.
,, ,, Chaudhuri, J.
,, ,, Das, A. N.
,, ,, Deb, Kshitindra
,, ,, Hossain, M. B.
,, ,, Mitter, P. C.
,, ,, Pochhammer, W. von
,, ,, Poddar, H. P.
,, ,, Sinha, P. C.
April 1. Banerjee, A. C.
,, ,, Perier, F.
,, ,, Hobbs, H
,, ,, Mohomed, I. A.
,, ,, Laden La, S. W.
,, ,, Oaten, E. F.
,, ,, Sadiq, H. S. M.
,, ,, Sen, B. C.
,, ,, Taraporewala, I. J. S.
May 6. Abbasi, M. A.
,, ,, Baral, G. C.
,, ,, Batra, H. L.
,, ,, Bose, H. M.
,, ,, Habibullah, Md.
,, ,, Jatia, Sir O. M.
,, ,, Khanna, V. L.
,, ,, Koester, Hans
,, ,, Kolah, K. S.
,, ,, Rao, M. V.
,, ,, Staub, Max.
,, ,, Ukil, A. C.
,, ,, Wadia, D. N.
June 3. Datta, S. K.
,, ,, Gupta, T. P.
,, ,, Lal, B. B.
,, ,, Musa, M.
,, ,, Singhania, P.
,, ,, Walton, E. B.
July 6. Bose, M. M.
,, ,, Varma, S. L.
Aug. 3. Chhibber, H. L.
,, ,, Coyajee, Sir J. C.
,, ,, Pruthi, H. S.
,, ,, Reuben, D. E.
Nov. 2. Acharya, P.
,, ,, Bradshaw, E. J.
,, ,, Chattopādhyāya, K. C.
,, ,, Crookshank, H.
,, ,, Gee, E. R.
,, ,, Hamid, M.
,, ,, James, R. C.
,, ,, Kimura, R.
,, ,, Mirza, M. B.
,, ,, Ormond, E. C.
,, ,, Sanaullah, M.
,, ,, Sharif, M.
,, ,, Stocks, Mrs. C. de Beauvoir
Dec. 7. Afzal, S. M.
,, ,, Carritt, S. E.
,, ,, Derviche-Jones, A.
,, ,, Narayanaswami, V.
,, ,, Stark, L.
,, ,, Varugis, G.

1926.
Jan. 4. Bathgate, Mrs. J. B.
,, ,, Becker, J. N.
,, ,, Brahmachari, I. B.
,, ,, Chatterji, K. C.
,, ,, Cunningham, J.
,, ,, Fleming, Andrew
,, ,, Gaffar, Abdul
,, ,, Hubert, Otto
,, ,, Murray, H.
,, ,, Nomani, H. H.
,, ,, Shortt, H. E.
,, ,, Sinton, J.A.
,, ,, Stapleton, G. (Miss)
,, ,, Sur, S. N.
,, ,, Younus, Muhammad
Feb. 1. Edwards, C. A. H.
,, ,, Ruthnaswamy, M.
,, ,, Meston, Lord
,, ,, Rao, T. R.
,, ,, Husain, M. A.
,, ,, Setna, S. B.
,, ,, Lele, S. H.
,, ,, Viswanath, B.
,, ,, Chaudhuri, H.
,, ,, Kashyap, S. R.
,, ,, Ghuznavi, Sir A. K.
,, ,, Khaitan, D. P.
,, ,, Hingston, H.
,, ,, Harris, H. G.
,, ,, Ghuznavi, A. H.
,, ,, Khambata, R. B.
,, ,, Baptist, A. E.

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	Mar.	1.	Bannerjee, W. C.	
	,,	,,	McKay, J. W.	
	,,	,,	Mookerjee, S. C.	
395	,,	,,	Snaith, J. F.	
	,,	,,	Gupta, D. N.	
	,,	,,	Mukherjee, A. N.	
	,,	,,	Datta, H. N.	
	,,	,,	Basu, N. K.	
400	,,	,,	Kramrisch, Stella (Miss)	
	,,	,,	Bagnall, J. F.	
	April	5.	Sondhi, G.	
	,,	,,	Gupta, S. N.	
	,,	,,	Senior-White, R.	
405	,,	,,	Ghose, B. C.	
	,,	,,	Parker, R. H.	
	,,	,,	Bhatia, M. L.	
	,,	,,	Mitter, K. N.	
410	,,	,,	Jones, T.	
	,,	,,	Mitter, K. K.	
	May	3.	Bhagwant Rai.	
	,,	,,	Bhaskaraiya, C.	
	June	7.	Outhwaite, H. A.	
415	,,	,,	Mishra, D	
	,,	,,	Hodge, E H. V.	
	,,	,,	De, P. N.	
	,,	,,	Lemmon, R. D.	
	July	5.	Husain, M. M.	
420	,,	,,	Banerji, S. K.	
	,,	,,	Mukhopadhyaya, P. K.	
	,,	,,	Tyson, J. D.	
	,,	,,	Lyne, H. W.	
	Aug.	2.	Calder, N. D.	
425	,,	,,	Oak, M. R.	
	,,	,,	Sohoni, V. V.	
	,,	,,	Majumdar, D. N.	
	,,	,,	Mukherjee, J. N.	
	,,	,,	Khettry, B.	
430	,,	,,	James, J. L.	
	,,	,,	De, B.	
	Nov.	1.	Jameson, T. B.	
	,,	,,	Collet, A. L.	
	,,	,,	Modi, J. R. K.	
435	,,	,,	Rau, S. S. R.	
	,,	,,	Westcott, F.	
	,,	,,	Barhut, T. K.	
	,,	,,	Pugh, L. P. E.	
	,,	,,	Ramanujaswami, P. V.	
440	,,	,,	Mills, J. P.	
	,,	,,	Rao, W. L.	
	,,	,,	Galstaun, S.	
	,,	,,	Chokhani, S.	
	,,	,,	Bagchi, P. C.	
445	Dec.	6.	Brahmachari, B. B.	
	,,	,,	Aiyangar, S. K.	
	,,	,,	Singh, B. R.	
	,,	,,	Dutt, J. C.	
450	,,	,,	Guha, S.	
	,,	,,	Banerjee, S. N.	
	,,	,,	Ghosh, B. K.	
	,,	,,	Nag, K.	
	Dec.	6.	Singh, R.	
	,,	,,	Rau, A. S.	
	,,	,,	Winfield, W. W.	455

1927.

	Jan.	3.	Chakravarty, N.	
	,,	,,	Bivar, H. G. S.	
	,,	,,	De, S. C.	
	,,	,,	Mohammed G.	
	Feb	7.	Imam, A. M. S. H.	460
	,,	,,	Chatterjee. A.	
	,,	,,	Bose. D. M.	
	,,	,,	Ghosh, J. C.	
	,,	,,	Captain, D. M.	
	,,	,,	Bhattacharya, D. R.	465
	,,	,,	Mukherjee, H. N.	
	Mar.	7.	Hopkinson, A. J.	
	,,	,,	Urquhart, W. S.	
	,,	,,	Sarma, Sir B. N.	
	,,	,,	Bake, A. A.	470
	,,	,,	Rankin, Sir G.	
	,,	,,	Dikkers, F. G.	
	,,	,,	Stagg, M.	
	,,	,,	Ward, Mrs. D.	
	,,	,,	Chakravarti, B.	475
	,,	,,	French, J. C.	
	,,	,,	Ghosh, P. N.	
	,,	,,	Abdul Kadir, A. F. M.	
	,,	,,	Fukushima, N.	
	,,	,,	Wright, F. M.	480
	April	4.	Helland, B. A.	
	,,	,,	Suhrawardy, Sir Z. R. Z.	
	,,	,,	Dewick, E. C.	
	,,	,,	Chetty, R. K. S.	
	,,	,,	Bridge, P. G.	485
	May	2.	Feegrade, E. S.	
	,,	,,	Hürlimann, M.	
	,,	,,	Clegg, E. L. G.	
	,,	,,	Watson. A. H.	
	June	6.	Nandi, S. C.	490
	,,	,,	Jain, B.	
	,,	,,	Keelan, D. H.	
	,,	,,	Staples, E. H.	
	,,	,,	Sinha, S. P.	
	,,	,,	James, F. E.	495
	July	4.	Chatterjee, P.	
	,,	,,	Chakravarti, C.	
	,,	,,	Maitra, J. N.	
	,,	,,	Vance, R. L.	
	Aug.	1.	Grimes, C. J.	500
	Nov.	7.	Das, D. K.	
	,,	,,	Tarkatirtha, B.	
	,,	,,	Mukherji, D.	
	,,	,,	Fitzgerald, T. J.	
	,,	,,	Brahmachary, S. C.	505
	,,	,,	De, P. C.	
	,,	,,	Vyasa, G. S. P.	
	,,	,,	Ghosh, D. N.	
	Dec.	5.	Tritton, A. S.	
	,,	,,	Namgyal, H.H. Sir Tashi	510

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Dec. 5. Dechhen, H.H. Kunzang
,, ,, Chowdhury, C.
,, ,, Peddie, J.
,, ,, Ghosh, K.
515 ,, ,, Mukerjee, S. K.

1928.
Jan. 2. Basu, N. M.
,, ,, Dastidar, N. K.
,, ,, Wright, Miss G. M.
,, ,, de Mello, F.
520 ,, ,, Puri, I. M.
,, ,, Wats, R. C.
,, ,, Sarkar, S. L.
,, ,, Row, R.
,, ,, Dutt, P. C.
525 ,, ,, Chaube, R. K.
,, ,, Mehta, M. H.
,, ,, Imam, S. H.
Feb. 6. Basu, S. K.
,, ,, Sinha, S. C.
530 ,, ,, Kewal, G. S.
,, ,, Khan, M. A. R.
,, ,, Ezra, Sir D.
,, ,, Majumdar, G. P.
,, ,, Reneman, Nico
535 ,, ,, Evans, F. L.
,, ,, Mukerji, M. N.
,, ,, Rai, L. N.
,, ,, Williams, T. T.
,, ,, Mallik, S. N.
540 ,, ,, Rafique, M.
,, ,, Gangooly, J. P.
,, ,, Shumsher, Sir Kaiser
,, ,, Piddington, A. B.
Mar. 5. Waight, H. G.
545 ,, ,, Plessen, Baron L.
,, ,, Melhuish, R. A.
,, ,, Gooptu, D. N.
,, ,, Datta, N. L.
,, ,, Das, Kedarnath
550 ,, ,, Hawes, G. L.
,, ,, Fullerton, G. M.
,, ,, Watling, R. G.
,, ,, Bealey, M. I. (Miss)
,, ,, Neogi, P.
555 ,, ,, Biswas, C. C.
,, ,, Shaha, B.
,, ,, Eberl, Otto
April 2. Shaw, E. B.
,, ,, Sen, B. K.
560 ,, ,, Hargopal.
,, ,, Ghosh, B. B.
,, ,, Majumdar, A. R.
,, ,, Mitra, J. N.
,, ,, Zachariah, K.
565 ,, ,, Roy, S. K.

April 2. Banerjee, S.
,, ,, Mullick, K. C.
,, ,, Mitra, D. N.
,, ,, Bhattacharjee, N. C.
,, ,, Kumar, K. K.
,, ,, Chowdhury, Rai J. 570
,, ,, Harris, L. E.
,, ,, Mookerjea, B.
May 7. Chatterji, K. N.
,, ,, Jardine, A.
,, ,, Chatterjea, Sir N. R. 575
,, ,, Mookerjee, K. B.
,, ,, Tucci, G.
,, ,, Murray, E. F. O.
,, ,, Moledina, M. H.
,, ,, Chowdhury, A. N. 580
,, ,, Gupta, J. N.
,, ,, Basu, N.
,, ,, Sastri, H.
,, ,, Ghosal, U. N.
,, ,, Mallik, S. C. 585
,, ,, Basak, S. C.
,, ,, Lord Sinha of Raipur.
,, ,, Saha, M. N.
June 4. Bhadra, S. N.
,, ,, Hobart, R. C. 590
,, ,, Narasimham, Y.
,, ,, Nandy, Sir M. C.
,, ,, Mukerji, M. N.
,, ,, Bhattasali, N. K.
July 2. Watson, E. 595
,, ,, Tagore, R. M.
,, ,, Roerich, N.
,, ,, Das, P. K.
Aug. 6. Jaitly, P. L. 600
,, ,, Das, A.
,, ,, Urchs, O.
,, ,, Young, A. W.
,, ,, Mitra, S.
,, ,, Vijver, R. H. van de 605
,, ,, Ghuznavi, I. S. K.
,, ,, Drummond, J. G.
,, ,, Chatterjee, S. C.
,, ,, Elberg, A. A. J. (Mrs.)
,, ,, Heron, A. M. 610
,, ,, Nag, (Miss) Shanti
Nov. 5. Olpadvala, E. S.
,, ,, Bose Mullick, G. N.
,, ,, Ishaque, M. 615
,, ,, Keable, G.
,, ,, Choprha, G.
,, ,, Statham, R. M.
,, ,, Dey, D.
,, ,, Reinhart, W. 620
,, ,, Rahman, A. S. M. L.
,, ,, Krishnan, M. S.
,, ,, Galstaun, J. C.

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(*Chronological.*)

2- 1-73 G. L. Houstoun (73 N.).
4- 2-85 H. P. Shastri (12 N.).
3- 3-86 R. D. Mehta (89 R.).
6- 6-88 A. P. Pennell (88 F.).
6- 3-89 T. H. D. La Touche (10 N.).
6-11-89 D. C. Phillott (10 F.).
11- 1-93 Sir Edward D. Maclagan (94 R.).
1- 2-93 P. O. Bodding (14 N.).
31- 7-93 G. P. Tate (23 N.).
27- 9-94 W. Vost (94 F.).
3- 7-95 Sir Nicholas D. Beatson-Bell (95 N.).
19- 9-95 K. C. De. (26 R.).
6-11-99 H.H. Sir Rameshwar Singh (14 N.).
5-12-00 J. W. A. Grieve (00 F.).
6- 2-01 J. Ph. Vogel (25 F.).
2- 7-02 F. Doxey (28 R.).
1- 6-04 G. H. Tipper (27 N.).
28- 9-04 H. E. Stapleton (26 R.).
3- 1-06 J. A. Chapman (28 N.).
7- 3-06 A. C. Woolner (28 N.).
19- 7-06 R. B. Whitehead (26 N.).
3- 7-07 J. Coggin Brown (28 N.).
1- 1-08 U. N. Brahmachari (27 R.).
6-10-09 P. J. Brühl (28 N.).
4- 5-10 S. B. Dhavle (10 N.).
1- 2-11 Jas. Insch (28 R.).
7- 6-11 M. Hidayat Hosain (27 N.).
5- 7-11 R. B. S. Sewell (28 N.).
1-11-11 Kamaluddin Ahmad (24 N.).
5- 3-13 J. L. Simonsen (19 N.).
4- 3-14 J. Bacot (14 F.).
6- 2-18 E. N. Ghosh (25 R.).
6- 2-18 Johan van Manen (25 R.).
5-12-23 H.H. Lakshman Sen (24 N.).
7- 5-24 B. Bhattacharya (24 N.).
6- 8-24 L. M. Davies (24 N.).
3-12-24 G. Roerich (28 F.).
6- 6-27 B. D. Jain (28 R.).
5-12-27 Chhajuram Chowdhury (27 R.).
5-12-27 H.H. Sir Tashi Namgyal (27 N.).
5-12-27 H.H. Kunzang Dechhen (27 N.).
6- 2-28 Sir D. Ezra (28 R.).
6- 2-28 Sir Kaiser Shumsher (28 N.).
4- 6-28 Sir M. C. Nandy (28 N.).
2- 7-28 N. Roerich (28 F.).
5-11-28 W. Reinhart (28 F.).

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ASSOCIATE MEMBERS.

Date of Election.	
2-12-85	* A. Führer, *Professor of Sanskrit.* 5, Dorenbachstrasse, Binningen, Basel, Switzerland.
4-6-02	* A. H. Francke, Rev. c/o Universitäts Bibliothek, Dorotheenstr. 81, Berlin, N.W. 7.
1-7-08	* Dinesh Chandra Sen, Rai Bahadur, B.A., D.Litt. 19, Visvakosh Lane, Baghbazar, Calcutta.
7-9-10	* L. K. Ananthakrishna Iyer, Rao Bahadur, B.A., L.T., F.R.A.I., *Lecturer in Anthropology, Calcutta University.* 2/3, Premchand Boral Street, Bowbazar, Calcutta.
7-12-10	* H. Hosten, Rev., S.J. St. Joseph's College, Darjeeling.
3-10-19	* H. Bruce Hannah. Bengal Club, Calcutta.
1-2-22	† Pierre Johans, Rev., S.J., B.Litt. (Oxon.), *Professor of Philosophy.* St. Xavier's College, Calcutta.
1-2-22	† Anantakrishna Sastri, Mahamahopadhyaya. 57/1, Sreegopal Mullick Lane, Calcutta.
6-2-24	W. Ivanow. c/o Asiatic Society of Bengal, 1, Park Street, Calcutta.
6-2-24	Kamalakrishna Smrititirtha, Mahamahopadhyaya. Bhatpara, 24-Parganas.
1-2-26	Durgadas Mukherjee, M.A., *Professor.* 35, Ballygunge Circular Road, Calcutta.
2-5-27	N. N. Vasu, Rai Saheb. 20, Visvakosh Lane, Baghbazar, Calcutta.

* Re-elected for a further period of five years on 5-3-1924 under Rule 2c.

† Re-elected for a further period of five years on 7-3-27 under Rule 2c.

ORDINARY FELLOWS.

Date of Election.	
2-2-10	Haraprasad Shastri, C.I.E., M.A., D.Litt.
2-2-10	T. H. D. La Touche, B.A., F.G.S.
2-2-10	D. C. Phillott, M.A., Ph.D., M.R.A.S.
2-2-10	Sir Prafulla Chandra Ray, Kt., C.I.E., M.A., D.Sc.
2-2-10	Sir E. D. Ross, Kt., C.I.E., Ph.D.
7-2-12	Sir J. C. Bose, Kt., C.S.I., C.I.E., M.A., D.Sc., F.R.S.
7-2-12	P. J. Brühl, I.S.O., F.G.S., Ph.D., F.C.S.
7-2-12	S. R. Christophers, C.I.E., O.B.E., I.M.S.
7-2-12	C. S. Middlemiss, C.I.E., B.A., F.G.S., F.R.S.
5-2-13	J. Ph. Vogel, Ph.D., Litt.D.
5-2-13	S. W. Kemp, B.A., D.Sc.
3-2-15	G. H. Tipper, M.A., F.G.S., M.Inst.M.M.
3-2-15	H. H. Haines, C.I.E., F.C.H., F.L.S.
2-2-16	Sir Richard Burn, Kt., C.I.E., I.C.S.
2-2-16	L. L. Fermor, A.R.S.M., D.Sc., F.G.S.
7-2-17	F. H. Gravely, D.Sc.

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Date of Election.	
6-2-18	J. L. Simonsen, D.Sc., F.I.C.
6-2-18	D. McCay, M.D., M.R.C.P., I.M.S.
6-2-18	A. A. Suhrawardy, M.A., PH.D., D.LITT., LL.D.
5-2-19	J. Coggin Brown, O.B.E., M.I.M.E., F.G.S.
5-2-19	W. A. K. Christie, B.Sc., PH.D., M.INST.M.M.
5-2-19	D. R. Bhandarkar, M.A., PH.D.
5-2-19	R. B. Seymour Sewell, M.A., M.R.C.S., L.R.C.P., F.Z.S., I.M.S.
2-2-21	U. N. Brahmachari, M.A., PH.D., M.D.
2-2-21	B. L. Chaudhuri, B.A., D.Sc., F.L.S., F.R.S.E.
1-2-22	Sir Edwin H. Pascoe, KT., M.A., D.Sc., Sc.D., F.G.S.
1-2-22	Ramaprasad Chanda, B.A.
7-2-23	G. N. Mukhopadhyaya, B.A., M.D.
4-2-25	M. Hidayat Hosain, PH.D.
4-2-25	Guy E. Pilgrim, D.Sc., F.G.S.
4-2-25	C. V. Raman, M.A., D.Sc., F.R.S.
1-2-26	P. O. Bodding, M.A.
7-2-27	R. Knowles, B A., M.R.C.S., L.R.C.P., I.M.S.
7-2-27	Johan van Manen.
7-2-27	B. Sahni, D.Sc.
7-2-27	A. C. Woolner, C.I.E., M.A.
6-2-28	H. E. Stapleton, M.A., B.Sc., I.E.S.
6-2-28	B. Prashad, D.Sc., F.Z.S., F.R.S.E
6-2-28	Sir R. C. Temple, Bart., C.B., C.I.E., F B.A., F.S.A.
6-2-28	C. A. Bentley, M.B., D.P.H., D.T.M. & H.

SPECIAL HONORARY CENTENARY MEMBER.

Date of Election.	
15-1-84	A. H. Sayce, *Professor of Assyriology, Queen's College.* Oxford, England.

HONORARY FELLOWS.

Date of Election.	
5-2-96	Charles Rockwell Lanman. 9, Farrar Street, Cambridge, Massachusetts, U.S.A.
6-12-99	Sir Edwin Ray Lankester, K.C.B., M.A., LL.D., F.R.S. British Museum (Nat. Hist.), Cromwell Road, London, S.W.
2-3-04	Sir George Abraham Grierson, K.C.I.E., O.M., PH.D., D.LITT., LL.D., F.B.A., I.C.S. (*retired*). Rathfarnham, Camberley, Surrey, England.
6-9-11	Alfred William Alcock, C.I.E., M.B., LL.D., F.R.S. Heathlands, Belvedere, Kent, England.
6-9-11	Kamakhyanath Tarkavagisa, Mahamahopadhyaya. 11½/4, Shambazar Street, Calcutta.
5-8-15	Sir Joseph John Thomson, KT., O.M., M.A., Sc.D., D.Sc., LL.D., PH.D., F.R.S. Trinity College, Cambridge, England.
6-12-16	G. A. Boulenger, F.R.S., LL.D. Jardin Botanique du L'Etat, Brussels.

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	2-5-17	HERBERT ALLEN GILES, *Professor*. 10, Selwyn Gardens, Cambridge, England.
	5-2-20	THE RIGHT HON'BLE SIR CHARLES ELIOT, K.C.M.G., C.B., M.A., LL.D., D.C.L. Beech Hill, Carleton, Skipton-in-Craven, England.
10	4-2-20	SYLVAIN LEVI. Collège de France, rue Guy-de-la-Brosse 9, Paris, Ve.
	4-2-20	SIR AUREL STEIN, K.C.I.E., PH.D., D.LITT., D.SC., D.O.L., F.B.A. Srinagar, Kashmir.
	4-2-20	A FOUCHER, D.LITT. Boulevard Raspail 286, Paris XVIe.
	4-2-20	SIR ARTHUR KEITH, M.D., F.R.C.S., LL.D., F.R.S. Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C. 2.
	4-2-20	R. D. OLDHAM, F.R.S., F.G.S., F.R.G.S. 1, Broomfield Road, Kew, Surrey, England.
15	4-2-20	SIR DAVID PRAIN, KT., C.M.G., C.I.E., M.A., M.B., LL.D., F.R.S.E., F.L.S., F.R.S., F.Z.S., M.R.I.A. Royal Botanic Gardens, Kew, Surrey, England.
	4-2-20	SIR JOSEPH LARMOR, KT., M.P., M.A., D.SC., LL.D., D.C.L., F.R.S., F.R.A.S. St. John's College, Cambridge, England.
	4-2-20	SIR JAMES FRAZER, KT., D.C.L., LL.D., LITT.D. Trinity College, Cambridge.
	4-2-20	J. TAKAKUSU. Imperial University of Tokio, Japan.
	2-3-21	F. W. THOMAS, C.I.E., M.A., PH.D., *Boden Professor of Sanskrit, University of Oxford*. 161, Woodstock Road, Oxford, England.
20	7-6-22	W. H. PERKIN, PH.D., SC.D., LL.D., F.R.S. 5, Charlbury Road, Oxford.
	7-6-22	SIR THOMAS HOLLAND, K.C.S.I., K.C.I.E., D.SC., F.R.S. Imperial College of Science and Technology, South Kensington, London, S.W. 7.
	7-6-22	SIR LEONARD ROGERS, KT., C.I.E., M.D., B.S., F.R.C.P., F.R.S., I.M.S. 24, Cavendish Square, London, 4.
	1-11-22	ARTHUR ANTHONY MACDONELL, M.A., PH.D., D.O.L., *Emeritus Professor of Sanskrit*. University of Oxford, Oxford, England.
	7-1-25	STEN KONOW. Ethnographisk Museum, Oslo, Norway.
25	3-11-25	H. BEVERIDGE, I.C.S. (RETIRED). Pitfold, Shottermill, Surrey, England.
	7-3-27	THE RT. HON'BLE THE EARL OF LYTTON, P.C., G.C.S.I., G.C.I.E. Knebworth, Herts, England.
	4-7-27	C. SNOUCK HURGRONJE. Rapenburg 61, Leiden, Holland.
	5-12-27	LT.-COL. SIR T. WOLSELEY HAIG, K.C.I.E., C.S.I., C.B.E., M.A., C.M.G. 34, Gledstanes Road, West Kensington, London, W. 14.

CHANGES IN MEMBERSHIP.

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA THREE YEARS AND UPWARDS.*

**Rule* 40.—After the lapse of three years from the date of a member leaving India, if no intimation of his wishes shall, in the interval, have been received by the Society, his name shall be removed from the List of Members.

The following members are liable to removal from the next Member List of the Society under the operation of the above rule:—

1. The Earl of Ronaldshay. (1920.)
2. S. W. Kemp. (1910.)

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3. W. G. L. Gilbert. (1924.)
4. David McCay. (1905.)
5. J. T. Rankin. (1905.)
6. M. C. G. Young. (1906.)
7. R. C. James. (1925.)

Loss of Members During 1928.

By Retirement.

Ordinary Members.

1. V. S. Kuppaswamy. (1925.)
2. E. R. Sandstrom. (1926.)
3. Sir Alexander R. Murray. (1924.)
4. M. M. Wadhwana. (1926.)
5. A. J. Anbian. (1926.)
6. Amar Nath Gulati. (1926.)
7. Lal Chand. (1926.)
8. Gobind Sahai Hora. (1926.)
9. D. A. Fyfe. (1926.)
10. P. Parija. (1926.)
11. A. C. Banerji. (1925.)
12. Mohd. Habib. (1926.)
13. S. K. Raha. (1924.)
14. H. S. Sales. (1925.)
15. J. E. Webster. (1909.)
16. J. H. de C. Ballardie. (1920.)
17. C. S. Fox. (1913.) (withdrawn.)
18. H. C. Ghosh. (1927.)
19. R. G. M. Bathgate. (1926.)
20. P. Ganguli. (1920.)
21. K. Mukherji. (1926.)
22. J. H. Lindsay. (1925.)
23. E. W. O'G. Kirwan. (1926.)
24. Atma Ram Bery. (1925.)
25. P. Bery. (1926.)
26. R. K. Mukherji. (1922.)
27. D. P. Mukherji. (1927.) (withdrawn.)
28. A. M. Sawyer. (1926.)
29. Janaki Nath Ray. (1924.)
30. Sohan Lal. (1926.)
31. Kishore M. Gupta. (1917.)
32. W. A. Eaton. (Miss) (1924.)
33. R. C. Foskett. (1925.)
34. A. L. Coulson. (1927.)
35. R. K. Kacker. (1928.)
36. M. K. Ghosh. (1928.)
37. R. Mitsukuri. (1924.)
38. E. D. W. Greig. (1910.)
39. Bidhubhusan Ray. (1927.)
40. M. N. Roy-Chaudhuri. (1924.)
41. Sites Chandra Kar. (1920.)
42. Girija Sekhar Bose. (1926.)

By Death.

Ordinary Members.

1. Purna Chandra Bhanj Deo. (1928.)
2. B. P. D. Mitter. (1925.)
3. G. N. Roy. (1926.)

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4. Dewan Tek Chand. (1906.)
5. B. Smith Lyman. (1870.)

Honorary Centenary Member.

1. Emile Sénart. (1874.)

Associate Member.

1. E. Brunetti. (1915.)

UNDER RULE 38.

1. Arun Chandra Sinha. (1918.)
2. Khagendra Nath Chatterjee. (1916.)
3. S. Paramesvara Aiyer. (1920.)
4. Kumar Anand Kumar. (1921.)
5. H. B. C. Hill. (1920.)
6. Panchanan Mitra. (1919.)
7. Satyendra Mohan Chaudhuri. (1925.)
8. Shri Ram Nait. (1924.)
9. G. G. Narke. (1926.)
10. Radhika Nath Saha. (1916.)
11. S. Khuda Bukhsh. (1920.)
12. B. L. Sarraf. (1925.)
13. Sri D. S. Prasad. (1925)
14. H. W. B. Moreno. (1919.)
15. L. F. Rushbrook-Williams. (1915.)
16. R. S. Inamdar. (1925.)
17. Hemanta Ch. Chaudhuri. (1925.)
18. R. A. Kureishy. (1925.)

UNDER RULE 40.

1. E. S. Harcourt. (1920.)
2. W. Kirkpatrick. (1910.)
3. C. U. Wills. (1919.)
4. Ramprasad Tripathi. (1917.)
5. E. G. Fülep. (1922.)

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MEDALLISTS.

ELLIOTT GOLD MEDAL AND CASH.

Recipients.

1893 Chandra Kanta Basu.
1895 Yati Bhusana Bhaduri.
1896 Jnan Saran Chakravarti.
1897 Sarasi Lal Sarkar.
1901 Sarasi Lal Sarkar.
1904 Sarasi Lal Sarkar. / Surendra Nath Maitra.
1907 Akshoy Kumar Mazumdar.
1911 Jitendra Nath Rakshit. / Jatindra Mohan Datta.
1913 Rasik Lal Datta. / Saradakanta Ganguly. / Nagendra Chandra Nag. / Nilratan Dhar.
1918 Bibhutibhushan Dutta.
1919 Jnanendra Chandra Ghosh.
1922 Abani Bhusan Datta.
1923 Bhailal M. Amin.
1926 Bidhu Bhusan Ray.
1927 Kalipada Biswas.

BARCLAY MEMORIAL MEDAL.

Recipients.

1901 E. Ernest Green.
1903 Sir Ronald Ross, KT., K.C.B., C.I.E., K.C.M.G., M.R.C.S., F.R.C.S., D.P.H., LL.D., D.SC., M.D., F.R.S.
1905 D. D. Cunningham, C.I.E., F.R.S.
1907 A. W. Alcock, C.I.E., M.B., LL.D., F.R.S.
1909 Sir David Prain, KT., C.I.E., C.M.G., M.A., M.B., LL.D., F.R.S.E., F.L.S., F.Z.S., M.R.I.A., F.R.S.
1911 Karl Diener.
1913 William Glen Liston, C.I.E., M.D., D.P.H.
1915 J. S. Gamble, C.I.E., M.A., F.R.S.
1917 H. H. Godwin-Austen, F.R.S., F.Z.S., F.R.G.S.
1919 N. Annandale, C.I.E., D.SC., C.M.Z.S., F.L.S., F.R.S., F.A.S.B.
1921 Sir Leonard Rogers, KT., C.I.E., M.D., B.S., F.R.C.P., F.R.C.S., F.R.S.
1923 S. R. Christophers, C.I.E., O.B.E., M.B., I.M.S.
1925 J. Stephenson, C.I.E., B.SC., M.B., CH.B., F.R.C.S., F.R.S.E., I.M.S.
1927 S. W. Kemp, B.A., D.SC., F.A.S.B.

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SIR WILLIAM JONES MEMORIAL MEDAL.

RECIPIENT.

1927 Sir Malcolm Watson, KT., LL.D. (Hon.), M.D., C.M., D.P.H.

ANNANDALE MEMORIAL MEDAL.

RECIPIENT.

1927 Fritz Sarasin.

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PROCEEDINGS OF THE ORDINARY MONTHLY MEETINGS, 1928.

JANUARY, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 2nd, at 5-30 P.M.

PRESENT.

W. A. K. CHRISTIE, ESQ., B.Sc., Ph.D., M.Inst.M.M., F.A.S.B., President, in the Chair.

Members :

Bahl, Mr. K. N.
Bose, Mr. M. M.
Brahmachari, Dr. U. N.
Chanda, Rai Bahadur R. P.
Chatterjee, Mr. Patit Pabon
Chatterji, Mr. M. M.
Collet, Mr. A. L.
Coulson, Mr. A. L.
Fleming, Mr. Andrew
Ghose, Mr. Justice B B.
Ghose, Mr. T. P.
Jain, Mr. Chhote Lal
Manen, Mr. Johan van
Mehta, Mr. R. D.
Mukherjee, Dr. G. N.
Pilgrim, Dr. G. E.
Prashad, Dr. Baini
Sewell, Lt.-Col. R. B. S.
Ward, Mrs. Dorothy

Visitors :

Chatterji, Mr. G. C.
Coulson, Mrs. A. L.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of nineteen presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members :—

(1) *Basu, Narendra Mohun*, M.A., Professor of Physiology, Presidency College, Calcutta.
Proposer : U. N. Brahmachari.
Seconder : Baini Prashad.

(2) *Dastidar, Nalini Kanta Rai*, Rai Bahadur, Zemindar, Sylhet, Assam.
Proposer : U. N. Brahmachari.
Seconder : Baini Prashad.

(3) *Wright, Gertrude Mariam (Miss)*, Indian Educational Service, Principal, Bethune College, 181, Cornwallis Street, Calcutta.
Proposer : H. E. Stapleton.
Seconder : J. H. Lindsay.

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(4) *Mello, Froilano de*, M.D., D.T.M., Colonel, Director-General of Medical Services in Portuguese India, Professor of Parasitology, Nova Gôa.
Proposer: Baini Prashad.
Seconder: B. De.

(5) *Puri, I. M.*, Ph.D. (Cantab.), M.Sc. (Punjab), Medical Zoology, Central Research Institute, Kasauli, Punjab.
Proposer: Baini Prashad.
Seconder: U. N. Brahmachari.

(6) *Wats, R. C.*, Captain, M.D., D.P.H., D.T.M., I.M.S., Secunderabad.
Proposer: Baini Prashad.
Seconder: U. N. Brahmachari.

(7) *Sarkar, Sarasi Lal*, L.M.S., Civil Surgeon, P.O. Sonarpur, Noakhali.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(8) *Row, R.*, M.D., D.Sc. (Lond.), Professor of Pathology, Grant Medical College, Bombay, 27, New Marine Lines, Fort, Bombay.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(9) *Dutt, Promode Chandra*, Rai Bahadur, Pleader, Ex-Minister for Local Self-Government Assam, Sylhet, Assam.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(10) *Chaube, Ram Kumar*, Pandit, M.A., L.T. (Benares), M.A. (Cal.), M.R.A.S., Member, Benares Mathematical Society, Azmatgarh Palace, Benares.
Proposer: R. N. Saha.
Seconder: Sivapada Bhattacharjee.

(11) *Mehta, M. H.*, Managing Director, M. T. Ltd., 15, Chowringhee Place, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(12) *Kacker, R. K.*, Captain, L.M.S., T.D.D. (Wales), Medical Superintendent, King Edward VII Sanatorium, Bhowali (U.P.).
Proposer: U. N. Brahmachari.
Seconder: R. B. S. Sewell.

(13) *Imam, Syed Hasan*, Barrister-at-Law, Hasan Munzil, Patna.
Proposer: U. N. Brahmachari.
Seconder: N. F. Barwell.

The General Secretary reported the loss of membership during the previous month by resignation of:—

B. N. Ghosh (An Ordinary Member, 1926).
D. N. Bose (An Ordinary Member, 1925).
B. L. Bhatia (An Ordinary Member, 1926).
E. L. Norton (An Ordinary Member, 1913).
A. C. Atkinson (An Ordinary Member, 1911).
G. S. Lamba (An Ordinary Member, 1926).
H. K. Rai-Chaudhuri (An Ordinary Member, 1924).

The following exhibits were shown and commented upon:—

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1. R. B. S. SEWELL.—Pre-historic animal Remains from the ancient Indian City of Mohenjo-daro, Sind.
2. R. P. CHANDA.—Terracotta Figurines and a few other Antiquities from Mohenjo-daro.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

The General Secretary drew attention to three works of special interest written by members of the Society and two of which were presented to the Society during the last month by their authors :

1. Lt.-Col. R. KNOWLES : An Introduction to Medical Protozoology.
2. THE REV. P. O. BODDING : Santal Folk Tales, Vol. II.
3. RAI BAHADUR R. P. CHANDA : The Beginnings of Art in Eastern India with special Reference to Sculptures in the Indian Museum, Calcutta.

The General Secretary reported that a Public Lecture had been arranged for to be held on the 24th, at 6 P.M.

Lecturer : Mr. Justice Gregory.
Subject : The Celadon and Blue and White Porcelains.

The President announced that His Excellency the Governor of Bengal had consented to be present at the Annual Meeting of the Society to be held on Monday, 6th February, 1928, at 5-30 P.M.

The President invited the Members present to communicate to the General Secretary the names and addresses of non-members to whom they wished invitations to the above two functions to be issued.

On a proposal made by Sir C. C. Ghose, it was unanimously resolved to communicate congratulations on behalf of the Society to the following three members, the first two being Members of Council, on their receipt of the Honour of Knighthood :—

E. H. Pascoe, B. L. Mitter and J. C. Coyajee.

—◇—

FEBRUARY, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 6th, immediately after the termination of the Annual Meeting.

PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

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Members :

Chopra, Mr. B. N.
Das-Gupta, Mr. H. C.
Ghose, Sir C. C.
Hosain, Dr. M. Hidayat
Manen, Mr. Johan van
Mitter, Mr. Justice D. N.
Prashad, Dr. Baini
Sewell, Lt.-Col. R. B. S.

The minutes of the last meeting were read and confirmed.

The General Secretary announced that the presentations of books, etc., received during the last month would be exhibited at the next Ordinary Meeting

The following candidates were balloted for for election as Ordinary Members :—

(14) *Basu, Sudhir Kumar*, B.A., 24, Tarak Chatterjee's Lane, Calcutta.
Proposer : Harit Krishna Deb.
Seconder : U. N. Brahmachari.

(15) *Sinha, Suhrid Chandra*, Kumar, M.Sc., 15/1/1, Ramkanto Bose Street, Calcutta.
Proposer : Amrita Lal Bose.
Seconder : Harit Krishna Deb.

(16) *Kewal, Ganda Singh*, Ph.B.Sc., I.O.G.E., F.R.G.S. (London), F.T.S., F.I.A.Sc., M.C.A.S. (London), Post Box No. 1, Abadan (Persian Gulf).
Proposer : Baini Prashad.
Seconder : U. N. Brahmachari.

(17) *Khan, Mohd. Abdur Rahman*, A.R.C.S., B.Sc., F.P.L., F.O.U., Principal, Osmania University College, Hyderabad, Deccan.
Proposer : U. N. Brahmachari.
Seconder : Debendranath Ghosh.

(18) *Ezra, Sir David*, Kt., F.Z.S., M.B.O.U., 3, Kyd Street, Calcutta.
Proposer : Johan van Manen.
Seconder : W. A. K. Christie.

(19) *Majumdar, Girija Prasanna*, M.Sc., B.L., Professor of Botany, Presidency College, Calcutta.
Proposer : H. C. Das-Gupta.
Seconder : K. N. Mitter.

(20) *Reneman, Nico*, 52/1, Ballygunge Circular Road, Calcutta.
Proposer : Johan van Manen.
Seconder : F. G. Dikkers.

(21) *Evans, Frank Lucas*, Insurance Manager, Century Insurance Co., 4, Lyons Range, Calcutta.
Proposer : N. Ottens.
Seconder : Johan van Manen.

(22) *Mukerji, Manmatha Nath*, M.A., B.L., Judge, High Court, Calcutta ; 8/1, Harsi Street, Calcutta.
Proposer : U. N. Brahmachari.
Seconder : Debendranath Ghosh.

(23) *Rai, Lakshmi Narain*, L.M.S. (Calcutta), Assistant Civil Surgeon, Benares.
Proposer : U. N. Brahmachari.
Seconder : Debendranath Ghosh.

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(84) *Williams, T. Taliesin*, M.A., B.Sc., F.S.S., I.E.S., Principal, Rajshahi College, Rajshahi.
Proposer: H. E. Stapleton.
Seconder: W. A. K. Christie.

(25) *Mallik, S. N.*, C.I.E., M.A., B.L., Member, India Council, India Office, London; 2, Chandranath Chatterji Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

(26) *Rafique, Mohamad*, M.L.A., 19, Zakariah Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: A. F. M. Abdul Ali.

(27) *Gangooly, J. P.*, Officiating Principal, Government School of Arts, 28, Chowringhee, Calcutta.
Proposer: W. A. K. Christie.
Seconder: Baini Prashad.

(28) *Sir Kaiser Shumsher Jung Bahadur Rana*, K.B.E., Supradipta Manyavara, Lieut.-General, Nepalese Army, Kaiser Mahal, Kathmandu, Nepal.
Proposer: Johan van Manen.
Seconder: W. A. K. Christie.

(29) *Deo, Maharaja Purna Chandra Bhanj*, Lieutenant, Ruling Chief of Mayurbhanj State, P.O. Baripada, Orissa.
Proposer: W. A. K. Christie.
Seconder: Johan van Manen.

(30) *Piddington, Mr. Justice A. B.*, President, Industrial Commission of New South Wales, Sydney, Australia.
Proposer: W. A. K. Christie.
Seconder: Johan van Manen.

The General Secretary reported the deaths of:—

E. Brunetti (An Associate Member, 1915).
Diwan Tek Chand (An Ordinary Member, 1906).

The General Secretary reported the loss of membership during the last month by resignation of:—

V. S. Kuppaswamy (An Ordinary Member, 1925).
E. R. Sandstrom (An Ordinary Member, 1926).
Sir Alexander Murray (An Ordinary Member, 1924).
M. M. Wadhwana (An Ordinary Member, 1926).

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

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MARCH, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 2nd, at 5-30 P.M.

PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

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Members:

Agharkar, Dr. S. P.
Bhandarkar, Dr. D. R.
Bose, Mr. M. M.
Chaudhuri, Dr. B. L.
Christie, Dr. W. A. K.
Das-Gupta, Mr. H. C.
De, Mr. B.
Dikshit, Mr. K. N.
Fermor, Dr. L. L.
Ghose, Mr. Justice B. B.
McKay, Mr. J. W.
Manen, Mr. Johan van
Miles, Mr. W. H.
Prashad, Dr. Baini
Pugh, Mr. L. P. E.
Sarvadhikary, Sir D. P.
Sewell, Lt.-Col. R. B. S.
Stapleton, Mr. H. E.
Ward, Mrs. R. J. D.

Visitors:

Cotter, J. de P.
Varma, Mr. K. B.

In opening the meeting, the President announced the death of Lord Sinha of Raipur, news of which had been received during the day. Recalling to the meeting the eminent qualities of this great son of India, he suggested that it might be the wish of the meeting to give expression to their high regard for Lord Sinha's memory and to their grief on hearing his untimely demise.

He proposed that a letter of condolence be sent on behalf of the Society to Lady Sinha.

Unanimously adopted, all present standing.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of thirty-five presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members :—

(31) *Waight, Harry George,* B.A. (Oxon. and Lond.), F.R.G.S., I.C.S., Additional District and Sessions Judge, Dacca; c/o Lloyds Bank, Post Box No. 306, Calcutta.
Proposer: Baini Prashad.
Seconder: R. B. S. Sewell.

(32) *Plessen, Baron Leopold,* Acting Consul-General for Germany, 2, Store Road, Ballygunge, Calcutta.
Proposer: H. Koester.
Seconder: Johan van Manen.

(33) *Melhuish, Robert Aveline,* Commander, R.I.M., Surveyor-in-Charge, Marine Survey of India, c/o R.I.M. Dockyard, Bombay.
Proposer: R. B. S. Sewell.
Seconder: Baini Prashad.

(34) *Gooptu, Dwijendra Nath,* Medical Practitioner and Landholder, 5, Middleton Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Sir C. C. Ghose.

(35) *Datta, Nogendra Lal,* Merchant and Landholder, 76, Beadon Street, Calcutta.

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Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(36) *Das, Kedarnath,* C.I.E., M.D., Principal, Carmichael Medical College; 22, Bethune Row, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

(37) *Hawes, George Laurence,* M.C., Underwriter, 4, Merlin Park, Ballygunge, Calcutta.
Proposer: N. Ottens.
Seconder: Johan van Manen.

(38) *Fullerton, George MacFarland,* B.Sc., Banking, c/o The National City Bank of New York, 4, Clive Street, Calcutta.
Proposer: N. Ottens.
Seconder: Johan van Manen.

(39) *Watling, R. G.,* Indian Police, Railway Police, E.I.Ry., 5, Strand Road, Howrah.
Proposer: N. F. Barwell.
Seconder: Baini Prashad.

(40) *Bealey, Margaret Isabella* (*Miss*), L.L.A. St. Th., Trained Teacher, Head of the Diocesan House for Church Workers, St. Monica's Home, 167, Lower Circular Road, Calcutta.
Proposer: N. F. Barwell.
Seconder: Baini Prashad.

(41) *Neogi, Punchanan,* M.A., Ph.D., Premchand Roychand Scholar, Member, Indian Educational Service, Professor of Chemistry, Presidency College; 21, Kundu Lane, Belgachia, Calcutta.
Proposer: C. V. Raman.
Seconder: R. B. S. Sewell.

(42) *Biswas, Charu Chandra,* M.A., B.L., Advocate, High Court; 58, Puddopukur Road, P.O. Elgin Road, Calcutta.
Proposer: Johan van Manen.
Seconder: Sir C. C. Ghose.

(43) *Shaha, Brajabullav,* M.B., D.T.M., Medical Practitioner, 45A, Sovabazar Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(44) *Eberl, Otto,* Dr. jur., Vice-Consul for Germany, 2, Store Road, Ballygunge, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

The General Secretary reported receipt of news of the death of Dr. Carl Diener (Barclay Memorial recipient in 1911).

Dr. L. L. Fermor gave a brief sketch of the life and work of the late scholar.

Resolved to send to the relations of the late Dr. Diener the condolences of the Society.

Adopted unanimously.

Also resolved to insert an Obituary Notice of Dr. Carl Diener in the "Proceedings of the Society." (See page cxcviii).

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The General Secretary reported the loss of membership during the previous month by resignation of :—

A. J. Anbian (An Ordinary Member, 1926).
Amar Nath Gulati (An Ordinary Member, 1926).
Lal Chand (An Ordinary Member, 1927).
Gobind Sahai Hora (An Ordinary Member, 1927).

The General Secretary reported that the election of

Satya Narayana Rajaguru (Elected on 7-11-27),

had become null and void, under Rule 9.

The General Secretary reported the constitution of the various standing Committees of the Society for the ensuing year to be as follows :—

Library Committee :

President.
Treasurer.
General Secretary.
Philological
Jt. Philological
Biological
Physical Science } Secretaries.
Anthropological
Medical
Library
} *Ex-officio.*

Sir C. C. Ghose.
Mr. J. H. Lindsay.

Publication Committee :

President.
Treasurer.
General Secretary.
Philological
Jt. Philological
Biological
Physical Science } Secretaries.
Anthropological
Medical
Library
} *Ex-officio.*

Sir C. C. Ghose.

Finance Committee :

President.
Treasurer.
General Secretary.
} *Ex-officio.*

Sir R. N. Mookerjee.
MM. H. P. Shastri.
Mr. J. C. Mitra.
Mr. A. R. Bery.

The General Secretary reported that the Council had nominated Mahamahopadhyaya Haraprasad Shastri, C.I.E., M.A., D.Litt., to serve as their nominee on the Special Selection Committee of the Kamala Lectureship of the Calcutta University for 1928.

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The following papers were read :—

1. Hem Chandra Das-Gupta.—*Two Types of Sedentary Games prevalent in British Garhwal.*

2. W. Ivanow.—*Some Persian Darwish Songs.*

3. S. Krishna *and* H. Chaudhuri.—*A preliminary Report on Injection Experiments with special reference to the Production of Alkaloids and general Metabolism in Plants.*

4. M. Hidayat Hosain.—*Tadhkirat at-Talib al-Mu'allam of Sibt Ibin al-'Ajami.*

5. Bibhuti Bhusan Datta.—*The Hindu Method of Testing Arithmetical Operations.*

The following communication was made :—

1. A new hoard of Kashmir coins found in Banda District, C.P.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

APRIL, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 6th, at 5-30 P.M.

Present.

Rai Upendra Nath Brahmachari Bahadur, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members :

Banerji, Mr. R. D.
Bhandarkar, Dr. D. R.
Chatterji, Mr. P. P.
Christie, Dr. W. A. K.
Das-Gupta, Mr. H. C.
Dikshit, Mr. K. N.
Ghose, Sir C. C.
Ghose, Dr. E.
Ghose, Mr. T. P.
Law, Dr. S. C.
Manen, Mr. Johan van
Mukherjee, Dr. G. N.
Prashad, Dr. Baini
Sarvadhikary, Sir D. P.
Sewell, Lt.-Col. R. B. S.
Shaha, Dr. B.
Shastri, MM. H. P.
Ward, Mrs. R. J. D.

Visitor :

Chatterji, Mr. K. N.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of forty-eight presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members :—

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(45) *Shaw, Edward Brian*, M.A. (Cambridge), Indian Civil Service, Sylhet, Assam.
Proposer: J. P. Mills.
Seconder: J. H. Hutton.

(46) *Sen, Benoy Kumar*, M.A., Professor of History, Presidency College; 10, Baloram Ghosh Street, P.O. Shambazar, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. C. Das-Gupta.

(47) *Hargopal*, Pandit, Govt. Jagirdar, Landlord, Turkman Gate, Delhi.
Proposer: R. P. Chanda.
Seconder: Baini Prashad.

(48) *Ghosh, Bepin Behari*, M.B., Medical Practitioner, 1, Hem Kar Lane, P.O. Shambazar, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(49) *Majumdar, Akhil Ranjan*, M.B., Teacher of Materia Medica, Campbell Medical School; 29-B, Chittaranjan Avenue, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(50) *Mitra, Jogendra Nath*, L.M.S., Civil Surgeon, Comilla.
Proposer: U. N. Brahmachari.
Seconder: H. P. Shastri.

(51) *Zachariah, K.*, M.A. (Oxon.), I.E.S., Professor of History, Presidency College; 33-1, Amherst Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. C. Das-Gupta.

(52) *Roy, Suhrid Kumar*, Ph.D., Professor of Geology, Indian School of Mines, Dhanbad.
Proposer: H. C. Das-Gupta.
Seconder: U. N. Brahmachari.

(53) *Banerjee, Srikumar*, M.A., Ph.D., Professor of English, Presidency College; P-72, Saheb Bagan, P.O. Kalighat, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. C. Das-Gupta.

(54) *Mullick, Kartick Churn*, Kumar, Director, Raja D. N. Mullick & Sons, Ltd., Colootola Rajbati, Calcutta.

(55) *Mitra, Debendra Nath*, B.Sc. (Lond.), LL.B. (Lond.), Barrister-at-Law, 51-2, Ramkanto Bose Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. P. Shastri.

(56) *Bhattacharjee, Nibaran Chandra*, M.A., B.Sc., Professor of Physiology, Presidency College; 19, Hindusthan Road, Ballygunge, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. C. Das-Gupta.

(57) *Kumar, Kumar Krishna*, M.A., B.L., Zemindar and Banker, 31 and 31-1, Burtolla Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: H. P. Shastri.

(58) *Chowdhury, Rai Jatindranath*, Zemindar, 36, Russa Road, Tollygunge, Calcutta.

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Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(59) *Harris, Lawrence Ernest*, Engineer, Manager for India, Messrs. Sulzer Brothers, 11, Clive Street (P.O. Box No. 508), Calcutta.
Proposer: Johan van Manen.
Seconder: U. N. Brahmachari.

(60) *Mookerjea, Bhabadeb*, Merchant, 48, Barrackpore Trunk Road, P.O. Baranagore.
Proposer: U. N. Brahmachari.
Seconder: M. Hidayat Hosain.

The General Secretary reported the deaths of:

G. N. Roy (An Ordinary Member, 1926).
B. P. D. Mitter (An Ordinary Member, 1925).
B. Smith Lyman (A Life Member, 1870).

The General Secretary reported receipt of news of the death of Lt.-Col. C. E. Luard, an Ordinary Member of the Society from 1906–1925.

The General Secretary reported the loss of membership during the last month by resignation of:

D. A. Fyfe (An Ordinary Member, 1926).
Pran Krishna Parija (An Ordinary Member, 1926).
A. C. Banerjee (An Ordinary Member, 1925).

Dr. Baini Prashad read an Obituary Notice of E. Brunetti (1862–1927). (See page cxcix).

The following papers were read:—

1. Ekendranath Ghosh.—*On the Identification of Leeches recognised by Susruta.*

2. Satya Churn Law.—*On Pericrocotus speciosus speciosus (Lath) occurring in Ranchi District, Chota Nagpur.*

3. K. N. Chatterji.—*The Use of Nose Ornaments in India.*

4. D. N. Majumdar.—*Some Worship Festivals of the Hos of Kolhan.*

5. H. Hosten.—*Letter of Fr. Jerome Xavier (Lahore, 1598) and of Fr. Manoel Pinheiro (Lahore, 1599).*

6. C. W. Gurner.—*Aśvaghoṣa and the Rāmāyaṇa.*

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

The President announced that a meeting of the Medical Section would be arranged for to be held during the month.

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MAY, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 7th, at 5-30 P.M.

PRESENT.

MAHAMAHOPADHYAYA HARAPRASAD SHASTRI, C.I.E., M.A., D.Litt., F.A.S.B., Philological Secretary, in the Chair.

Members:

Bose, Mr. M. M.
Chanda, Rai Bahadur R. P.
Chatterji, Mr. P. P.
Chattopadhyay, Mr. K. P.
Christie, Dr. W. A. K.
Chaudhuri, Dr. B. L.
Das-Gupta, Mr. H. C.
Das-Gupta, Dr. S. N.
De, Mr. B.
Deb, Raja Kshitindra
Fleming, Mr. Andrew
Ghose, Sir C. C.
Ghose, Dr. E.
Ghosh, Mr. T. P.
Guha, Dr. B. S.
Jain, Mr. C. L.
Kumar, Kumar Krishna
Manen, Mr. Johan van
Mukherji, Mr. P. N.
Mookerjee, Mr. S. C.
Prashad, Dr. Baini
Rao, Mr. H. S.
Sarvadhikary, Sir D. P.
Sewell, Lt.-Col. R. B. S.
Shaha, Dr. B.
Suhrawardy, Sir Z. R. Z.
Varugis, Mr. George
Watling, Mr. R. G.
Ward, Mrs. R. J. D.

Visitor:

Watling, Mrs.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of fifty-one presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members:—

(61) *Chatterji, Kedar Nath*, B.Sc. (London), A.R.C.S. (London), Mining, 2-1, Townshend Road, Calcutta.
Proposer: R. D. Banerji.
Seconder: U. N. Brahmachari.

(62) *Jardine, Alexander*, D.Sc., M.Inst.C.E., M.I.E. (Ind.), Director, Messrs. Jessop & Co., Ld., 93, Clive Street, Calcutta.
Proposer: W. A. K. Christie.
Seconder: R. Knowles.

(63) *Chatterjea, Sir Nalini Ranjan*, Kt., M.A., B.L., Retired Judge and sometime acting Chief Justice, Calcutta High Court; 91A, Harish Mukherjee Road, Bhowanipore, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(64) *Mookerjee, Kumud Bandhob*, Merchant and Zemindar, Champany, Baidyabati.
Proposer: U. N. Brahmachari.
Seconder: R. Knowles.

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(65) *Banerji, Surendra Chandra*, M.A., B.Sc. (Cal.), F.L.S. (Lond.), Professor of Botany, Presidency College; 30, Shastitala Road, Narkeldanga, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Sir C. C. Ghose.

(66) *Fox, E. C. R.*, Capt., I.M.D., Superintendent, Pasteur Institute; 2-1, Outram Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(67) *Tucci, Guiseppe*, Ph.D., Professor of Religions and Philosophy of India and the Far East, University of Rome; c/o The Dacca University, Ramna, Dacca.
Proposer: H. P. Shastri.
Seconder: Johan van Manen.

(68) *Murray, Eugene Florian Oliphant*, Mining Engineer, Tatanagar, B. N. Ry.
Proposer: R. B. S. Sewell.
Seconder: R. P. Chanda.

(69) *Moledina, Mohamed Hashimi*, Landlord and Merchant, 30, Main Street, Camp Poona.
Proposer: Abdul Kadir.
Seconder: S. K. Belvalkar.

(70) *Chowdhury, A. N.*, B.Sc., Zemindar, 42, Hem Chandra Street, Kidderpore, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: R. Knowles.

(71) *Gupta, J. N.*, M.B.E., C.I.E., I.C.S., Member, Board of Revenue, Government of Bengal; 7, Pretoria Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(72) *Basu, Narendranath*, L.M.S., Medical Profession, Professor of Obstetrics and Gynecology, Carmichael Medical College; 7, Raja Bagan Street, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: S. K. Chatterji.

(73) *Sastri, Hirananda*, M.A., M.O.L., D.Litt., Government Epigraphist for India, Baikie House, Ootacamund, S. India.
Proposer: Baini Prashad.
Seconder: George Varugis.

(74) *Ghosal, Upendra Nath*, M.A., Ph.D., Professor of History, Presidency College; 21, Badur Bagan Row, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: M. Hidayat Hosain.

(75) *Mallik, Satyendra Chandra*, Judge, Calcutta High Court; 7-3, Burdwan Road, Alipur, Calcutta.
Proposer: Sir Zahid Suhrawardy.
Seconder: U. N. Brahmachari.

(76) *Basak, Sarat Chandra*, Advocate, Calcutta High Court; 13, Russa Road (North), Calcutta.
Proposer: Sir Zahid Suhrawardy.
Seconder: U. N. Brahmachari.

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(77) *Lord Sinha of Raipur*, Queen Anne Mansions, St. James Park, London.
Proposer : U. N. Brahmachari.
Seconder : Sir C. C. Ghose.

(78) *Saha, Megh Nad*, D.Sc., F.R.S., Professor of Physics, University of Allahabad, P.O. Katra, Allahabad.
Proposer : S. K. Chatterji.
Seconder : Sir C. C. Ghose.

(79) *Ghosh, Mohit Kumar*, M.A. (Cal.), B.Com. (Lond.), Head of the Department of Commerce, University of Allahabad, 12, George Town, Allahabad.
Proposer : S. K. Chatterji.
Seconder : R. Knowles.

(80) *Tamkeen Kazmi, Syed Misbahuddin*, M.R.A.S. (Lond.), Mansabdar, Kootlai, Alijah, Hyderabad (Deccan).
Proposer : M. Hidayat Hosain.
Seconder : M. Sharif.

The General Secretary reported the death of :

Lt. Maharajah Purna Chandra Bhanj Deo, Ruler of Mayurbhanj State (A Life Member, 1928).

The General Secretary reported the loss of membership during the last month by resignation of :

Kshetra Kalo Mukherjee (An Ordinary Member, 1926).
Mohammed Habib (An Ordinary Member, 1926).

The General Secretary reported that during the month, the number of Ordinary Members had, for the first time in the history of the Society, passed 600.

In accordance with Rules 37 and 38, the General Secretary announced that the names of the following members would be suspended for a month, to be removed from the Society for non-payment of subscription, unless the amount due be paid before the next Monthly Meeting :

Arun Chandra Sinha.	Anand Kumar.
Khagendra Nath Chatterji.	H. B. C. Hill.
S. Parameswara Iyer.	Panchanon Mitra.

In accordance with Rule 48a, the General Secretary announced that the Council, since the last Ordinary Monthly Meeting, had passed a set of Regulations regarding "Institutional Membership" in the Society, as follows :—

1. *Bonâ fide* literary, scientific and educational institutions, public and official bodies, and libraries shall be eligible for Institutional Membership.
2. Admission shall be determined by the Council, who shall report new admissions to the next Ordinary Monthly Meeting.
3. An Institutional Member shall pay a registration fee of Rs. 50 and an annual fee, in advance, of Rs. 24.
4. An Institutional Member shall be entitled to receive one copy of all numbers of the *Journal and Proceedings* and *Memoirs* published during the period of its membership and to purchase for the Insti-

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tution publications of the Society at the rates in force for Ordinary Members.

5. Candidates for Institutional Membership shall, when applying for such membership, give an undertaking that the institution will not purchase any of the Society's publications except for its own use and that it will abide by these regulations.

6. Institutional Membership shall lapse through non-payment of the annual fee during the year for which it is due. It may be revived by payment of a further registration fee of Rs. 50.

7. The Council may terminate the Institutional Membership of any institution at its discretion, without compensation."

The General Secretary communicated a letter from the Director, Zoological Survey of India, Indian Museum, Calcutta. concerning the collection of manuscript drawings of Hamilton-Buchanan in the Society's Library.

The following papers were read :

1. H. C. Das-Gupta.—*Batrachian and reptilian Remains found in the panchet Beds at Deoli.*

2. Sunder Lal Hora.—*Lunar Periodicity in the Reproduction of Insects.*

3. C.de Beauvoir Stocks.—*Haramukh Legends.*

4. W. Ivanow.—*Jargon of Persian mendicant Darwishes.*

5. R. B. S. Sewell.—*The Temperature and Salinity of the surface Water of the Bay of Bengal and Andaman Sea, with reference to the Laccadive Sea.*

6. K. P. Chattopadhyay.—*Social Organisation of the Satkarnis and the Sungas.*

The following communications were made by Mr. Johan van Manen :

1. On the Script of the Legends of the Harappa Seals.
2. Letter from Dr. A. S. Tritton concerning a certain passage from Bar-Hebraeus.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

JUNE, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 4th, at 5-30 P.M.

Present.

Rai Upendra Nath Brahmachari Bahadur, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

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Members :

Bose, Mr. M. M.
Christie, Dr. W. A. K.
Collet, Mr. A. L.
Das-Gupta, Mr. H. C.
Dikshit, Mr. K. N.
Ghose, Mr. T. P.
Guha, Dr. B. S.
Kumar, Kumar Krishna
Manen, Mr. Johan van
Sewell, Lt.-Col. R. B. S.
Sohoni, Mr. V. V.
Watling, Mr. R. G.

Visitors :

Kanitkar, Mr. V. V.
Mookerjee, Mr. P. P.
Watling, Mrs.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of twenty-five presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as ordinary members :—

(81) *Bhadra, Satyendra Nath,* Rai Bahadur, M.A., Principal, Jagannath Intermediate College, Dacca.
Proposer : U. N. Brahmachari.
Seconder : Sir B. L. Mitter.

(82) *Hobart, Robert Charles,* I.C.S., Collector, Shahjahanpur, U.P.
Proposer : N. Barwell.
Seconder : Johan van Manen.

(83) *Narasimham, Yechuri,* M.A., Dewan, Vizianagram Samsthanam, Vizianagram.
Proposer : U. N. Brahmachari.
Seconder : C. K. Sarkar.

(84) *Nandy, Maharajah Sir Manindra Chandra,* K.C.I.E., Zemindar, Chairman, District Board, Murshidabad ; Kasimbazar, Murshidabad.
Proposer : A. C. Vidyabhusan.
Seconder : Sir B. L. Mitter.

(85) *Mukerji, Monmatha Nath,* B.E., Engineer and Architect, 173, Raja Dinendra Street, Calcutta.
Proposer : U. N. Brahmachari.
Seconder : R. B. S. Sewell.

(86) *Bhattasali, Nalini Kanta,* M.A., Curator, Dacca Museum, P.O. Ramna, Dacca.
Proposer : Baini Prashad.
Seconder : R. B. S. Sewell.

The General Secretary reported receipt of news of the death of Émile Senart (a Special Honorary Centenary Member, 1884).

The General Secretary reported the loss of membership during the last month by resignation of :—

S. K. Raha (An Ordinary Member, 1924).
J. E. Webster (An Ordinary Member, 1909).
H. S. Sales (An Ordinary Member, 1925).
J. H. de Caynoth Ballardie (An Ordinary Member, 1920).

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In accordance with Rules 37 and 38, the General Secretary announced that the names of the following Ordinary Members, would be suspended as defaulters within the Society's building for a month to be removed from the Society for non-payment, unless the amount due be paid before the next Monthly Meeting :—

Satyendra Mohan Chaudhuri.
Shri Ram Nait.
G. G. Narke.
Radhikanath Saha.
B. L. Saraff.
Raja V. D. S. Parasad of Jayantipuram.
S. Khuda Bukhsh.

In accordance with Rule 38, the President declared that the names of the following members who had, since the last Ordinary Monthly Meeting, been suspended as defaulters within the Society's building, had been removed as defaulters from the Society's register for non-payment of dues :—

Arun Chandra Sinha.
Khagendra Nath Chatterji.
S. Parameswara Iyer.
Anand Kumar.
H. B. C. Hill.
Panchanon Mitra.

The following papers were read :—

1. Kalipada Mitra.—*Marriage Customs in Behar.*

2. Sunder Lal Hora.—*A further Note on the MS. Drawings of Fish in the Mackenzie Collection.*

3. Brajendranath Banerjea.—*Ishwarchandra Vidyasagar as a Promoter of Female Education in Bengal.*

4. Jagannath Das Ratnakar.—*The Historical Stone Horse in the Lucknow Museum.*

The following exhibits were shown and commented upon :—

1. Johan van Manen.—Toba Batak (Sumatra) magical manuscript on tree bark.

2. R. B. S. Sewell.—An exhibit of perforated circular marble objects; also an axe-head found associated with the remains of two individuals in a grave in coral conglomerate, a quarter of a mile from the seashore in Car Nicobar.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

JULY, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 2nd, at 5-30 P.M.

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PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members:

Agharkar, Dr. S. P.
Coyajee, Sir J. C.
Fleming, Mr. Andrew
Guha, Dr. B. S.
Jain, Mr. C. L.
Khambata, Dr. R. B.
Law, Dr. S. C.
Manen, Mr. Johan van
Modi, Mr. J. R. K.
Neogi, Dr. P.
Sarkar, Dr. S. L.
Sarvadhikary, Sir D. P.
Sewell, Lt.-Col. R. B. S.
Sohoni, Mr. V. V.
Suhrawardy, Sir Z. R. Z.
Wadia, Mr. D. N.

Visitors:

Urchs, Dr. Oswald and another.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of fifty-six presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members:—

(87) *Watson, Edwin*, B.E. (Dublin), Member of Institute of Engineers (India), Deputy Agent, East Indian Railway; 27, Theatre Road, Calcutta.
Proposer: N. Barwell.
Seconder: Johan van Manen.

(88) *Mookerjee, P. P.*, M.A., B.L., Barrister-at-law, 150, Harish Mukherjee Road, Calcutta.
Proposer: K. Kumar.
Seconder: U. N. Brahmachari.

(89) *Tagore, Ranendra Mohan*, Zemindar, 6, Alipore Park Road East, Calcutta.
Proposer: M. Hidayat Hosain.
Seconder: Suniti Kumar Chatterji.

(90) *Roerich, Nicholas*, Professor, Honorary President, Master Institute of United Arts, New York, U.S.A., Artist-Painter, 310, Riverside Drive, New York, U.S.A.
Proposer: Johan van Manen.
Seconder: Suniti Kumar Chatterji.

(91) *Das, Probodh Kumar*, M.A., B.L., P-84, Park Street Extension, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

(92) *Lall, Kamaldharee*, Barrister, Mohuddinagar, Bhagalpur.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

(93) *Huque, M. Azizul*, B.L., Lawyer, Krishnagar.
Proposer: U. N. Brahmachari.
Seconder: Baini Prashad.

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(94) *Hossain, The Hon'ble Nawab Musharruf*, Khan Bahadur, M.L.C., Minister, Government of Bengal, 42-A, Hazra Road, Calcutta.
Proposer: Sir D. P. Sarvadhikary.
Seconder: J. H. Lindsay.

(95) *Sarvadhikary, Prabhat Chandra*, Ph.D., D.Sc. (London), Professor of Botany, University College, Colombo (Ceylon).
Proposer: Sir D. P. Sarvadhikary.
Seconder: H. E. Stapleton.

The General Secretary reported the loss of membership during the last month by resignation of :—

Hari Charan Ghosh (An Ordinary Member, 1926).
R. G. M. Bathgate (An Ordinary Member, 1926).
P. Ganguli (An Ordinary Member, 1920).

In accordance with Rules 37 and 38, the General Secretary announced that the names of the following Ordinary Members would be suspended as defaulters within the Society's building for the period of a month, to be removed from the Society's register for non-payment, unless the amount due be paid before the next Monthly Meeting :—

H. W. B. Moreno.
L. F. Rushbrook-Williams.
R. S. Inamdar.
Hemanta Ch. Chaudhuri.
R. A. Kureishy.
Narendranath Raye.

In accordance with Rule 38, the President declared that the names of the following members which had, since the last Ordinary Monthly Meeting, been suspended as defaulters within the Society's building, had been removed as defaulters from the Society's register for non-payment of dues :—

Satyendra Mohan Chaudhuri.
Shri Ram Nait.
G. G. Narke.
Radhikanath Saha.
S. Khuda Bukhsh.
B. L. Sarraff.
Sri D. S. Prasad of Jayantipuram.

The following papers were read :—

1. Sir J. C. Coyajee.—*Some Shah Nameh Legends and their Chinese Parallels.*

2. Provash Ch. Basu.—*Head Dress of the Hill-tribes of Assam.*

3. Siddheswar Varma.—*The Phonetics of Lhandi.*

4. V. V. Sohoni.—*Bibliography of Meteorological Papers in the Publications of the Asiatic Society of Bengal.*

The General Secretary drew attention to some recent works of importance by Members of the Society, presented to the Society's Library or published by the Society.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

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AUGUST, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 6th, at 5-30 P.M.

PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.A., M.D., Ph.D., F.A.S.B., President, in the Chair.

Members:

Biyar, Mr. H. G. S.
Chakladhar, Mr. H. C.
Chapman, Mr. J. A.
Chaube, Pt. Ram Kumar
Coyajee, Sir J. C.
De, Mr. B.
Dikshit, Mr. K. N.
Fleming, Mr. Andrew
Fullerton, Mr. G. M.
Ghose, Sir C. C.
Gupta, Mr. S. N.
Insch, Mr. Jas.
Khambata, Dr. R. B.
Manen, Mr. Johan van
Modi, Mr. J. R. K.
Mookerjee, Mr. P. N.
Mookerjee, Mr. S. C.
Neogi, Dr. P.
Ottens, Mr. N.
Rao, Mr. H. S.
Ray, Kumar Sarat Kumar
Sarkar, Dr. S. L.
Sohoni, Mr. V. V.
Wadia, Mr. D. N.
Zachariah, Mr. K.

Visitors:

Nag, Miss Shanti
Olpadvala, Mr. E. S.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of thirty-four presentations of books, etc., which had been placed on the table for inspection.

The following candidates were balloted for for election as Ordinary Members:

(96) *Jaitly, P. L.*, Electrical Engineer, Merchant, 15, Canning Road, Allahabad.
Proposer: N. Ottens.
Seconder: Johan van Manen.

(97) *Das, Ayodhya*, Barrister-at-law, Gorakhpur, U.P.
Proposer: Johan van Manen.
Seconder: N. Ottens.

(98) *Urchs, Oswald*, M.D., Medical Practitioner, 2, Woodburn Road, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

(99) *Young, The Rev. Arthur Willifer*, Secretary, British and Foreign Bible Society, 23, Chowringhee, Calcutta.
Proposer: Johan van Manen.
Seconder: U. N. Brahmachari.

(100) *Akbar Khan, Ali*, B.A., Author, Bharati Library, Banglabazar, Dacca.
Proposer: M. Hidayat Hosain.
Seconder: S. K. Chatterji.

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(101) *Mitra, Subodh,* M.D. (Berlin), M.B. (Cal.), F.R.C.S. (Edin.), 148, Russa Road, Bhowanipore, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: R. B. S. Sewell.

(102) *Vijver, Richard Hubertus van de,* Merchant, 8, Lee Road, Hastings, Calcutta.
Proposer: Johan van Manen.
Seconder: U. N. Brahmachari.

(103) *Ghuznavi, Iskander S. K.,* Zemindar, Member, Advisory Board of Industries, Government of Bengal, Dilduar, Mymensingh.
Proposer: U. N. Brahmachari.
Seconder: M. Hidayat Hosain.

(104) *Drummond, J. G.,* M.A., I.C.S., J.P., Secretary, Local Self-Government, Government of Bengal, 2, Bishop Lefroy Road, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Sir R. N. Mookerjee.

(105) *Chatterjee, Sushil Chandra,* M.A., Government Research Scholar, Presidency College, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: B. K. Sen.

(106) *Elberg, Adeline Adrienne Johanna (née Rudolph),* 3A, Alipur Park Road West, Calcutta.
Proposer: Johan van Manen.
Seconder: U. N. Brahmachari.

(107) *Heron, A. M.,* D.Sc. (Edin.), F.G.S., F.R.G.S., F.R.S.E., Assistant Superintendent, Geological Survey of India, c/o Indian Museum, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

(108) *Naire, Bala Krishna,* Mining Engineer, Jojohuthu Chromite Mines, Chaibassa, B. N. Ry.
Proposer: U. N. Brahmachari.
Seconder: R. B. S. Sewell.

The General Secretary reported the loss of membership during the last month by resignation of:—

J. H. Lindsay (An Ordinary Member, 1925).
E. W. O'Gorman Kirwan (An Ordinary Member, 1926).
A. R. Bery (An Ordinary Member, 1925).
Paramanand Bery (An Ordinary Member, 1926).
Sites Ch. Kar (An Ordinary Member, 1920).
Radha Kumud Mukherjee (An Ordinary Member, 1923).

The General Secretary reported receipt of news of the death of the Rt. Hon'ble Ameer Ali, an Ordinary Member of the Society from 1877 to 1904.

On proposal of the General Secretary, seconded by the President, the meeting resolved to send a letter of condolence to the family of the deceased.

The General Secretary reported that the first application for the newly created Institutional Membership had been received from the Legatum Warnerianum (Oriental Department

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of the Leyden University Library), which had been accepted by the Council.

The General Secretary reported that Mr. Narendra Nath Raye who had, in the last meeting, been suspended as a defaulter, had paid up his dues in full.

In accordance with Rule 38, the President declared that the names of the following Members, who had since the last Ordinary Monthly Meeting, been suspended as defaulters within the Society's building, had been removed as defaulters from the Society's register for non-payment of dues :—

H. W. B. Moreno.
L. F. Rushbrook-Williams.
R. S. Inamdar.
Hemanta Ch. Chaudhuri.
R. A. Kureishy.

The following papers were read :—

1. Baini Prashad.—*On the Dates of Publication of "The Fishes of India" by Dr. Francis Day.*

2. J. H. Hutton.—*Wild Men in Assam.*

3. Sir J. C. Coyajee.—*Astronomy and Astrology in the Bahram Yasht.*

The following communication was made :—

1. K. N. Dikshit.—A newly discovered inscription from Nepal.

The following exhibit was shown and commented upon :—

1. K. N. Dikshit.—Some newly discovered images from the Chittagong District, acquired by the Government.

The General Secretary drew attention of the members present to the following presentations to the Society :—

1. A group photograph of the officers of the Science Congress, Calcutta, 1928.
2. A copy of Dr. Fritz Sarasin's work—Anthropologie der Neu-Caledonier und Loyalty-Insulaner, together with Atlas.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

The President announced that, unless special notice were given, there would be no Monthly Meetings during the recess months of September and October.

NOVEMBER, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 5th, at 5-30 P.M.

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PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members :

Bivar, Mr. H. G. S.
Bose Mullick, Mr. G. N.
Das, Dr. Kedar Nath
Das-Gupta, Mr. H. C.
Dikshit, Mr. K. N.
Ghose, Mr. T. P.
Ishaque, Mr. Md.
Majumdar, Mr. N. K.
Manen, Mr. Johan van
Mukherjee, Dr. G. N.
Rao, Mr. H. S.
Rao, Mr. M. Vinâyak
Sewell, Lt.-Col. R. B. S.
Sohoni, Mr. V. V.
Stagg, Major M.
Urquhart, Dr. W. S.
Young, Rev. A. Willifer

Visitors :

Das, Mr. P. C.
Fernandez, Mr. F. E.
Sohoni, Mr. J.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of eighty-six presentations of books, etc., which had been placed on the table for inspection.

The General Secretary reported that the following candidates had been elected Ordinary Members during the recess months, under Rule 7 :—

(109) *Ghose, Akshaya Kumar*, Bar.-at-law, Advocate, High Court; 5, Ram Narain Bhattacharya Lane, Beadon Street P.O., Calcutta.
Proposer: Kshitish Chandra Chatterjee.
Seconder: Johan van Manen.

(110) *Nag*, (Miss) *Shanti*, 3, Ashutosh Mukerjee Road, P.O. Elgin Road, Calcutta.
Proposer: K. N. Dikshit.
Seconder: Johan van Manen.

(111) *Olpadvala, E. S.*, 1, Corporation Street, Calcutta.
Proposer: D. N. Wadia.
Seconder: Johan van Manen.

(112) *Wellwood, Fred. O.*, M.I.Mun. and Civil Engineers, State Engineer, Baripada.
Proposer: Johan van Manen.
Seconder: P. S. Jackson.

(113) *Bose Mullick, G. N.*, M.A., Professor of History, Meerut College, Meerut, U.P.
Proposer: J. C. Mitra.
Seconder: Suniti Kumar Chatterji.

(114) *Ishaque, Mohammad*, M.A., B.Sc., M.R.A.S., Asst. Lecturer, Calcutta University; 42/3, Chandney Chowk Street, P.O. Dharamtala, Calcutta.
Proposer: M. Hidayat Hosain.
Seconder: G. N. Bose Mullick.

(115) *Keable, Rev. Geoffrey*, M.A., Lecturer, Bishop's College, 224, Lower Circular Road, Ballygunge, Calcutta.

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Proposer: H. G. S. Bivar.
Seconder: Sir C. C. Ghose.

(116) *Choprha, Gopichand,* Student, 47, Khangraputty, Calcutta.
Proposer: Kshitish Chandra Chatterjee.
Seconder: Baini Prashad.

(117) *Statham, R. M.,* Indian Educational Service, Secretary, Education Committee of the Indian Statutory Commission, Madras Club, Madras.
Proposer: Johan van Manen.
Seconder: R. B. S. Sewell.

(118) *Dey, Debakar, Rai Saheb,* Asst. Principal and Senior Professor of Veterinary Medicines, etc., Bengal Veterinary College, Asst. Principal (Govt.) Quarters, Bengal Vety. College, Belgachia P.O., Calcutta.
Proposer: B. De.
Seconder: Baini Prashad.

(119) *Reinhart, Werner,* Merchant, Rychenberg, Winterthur, Switzerland.
Proposer: Johan van Manen.
Seconder: N. Ottens.

The following candidates were balloted for for election as Ordinary Members:

(120) *Rahman, Nawabzada A. S. M., Latifur,* M.A. (Cantab.), Barrister-at-law, Judge, Presidency Court of Small Causes, Calcutta: 10, Turner Street, Calcutta.
Proposer: M. Hidayat Hosain.
Seconder: U. N. Brahmachari.

(121) *Krishnan, Maharajapuram Sitaram,* M.A., Ph.D., A.R.C.S., D.I.C., Assistant Superintendent, Geological Survey of India, 27, Chowringhee Road, Calcutta.
Proposer: H. Srinivasa Rao.
Seconder: B. N. Chopra.

(122) *Galstaun, John Carapiet,* Merchant and Landholder, 234/4, Lower Circular Road, Calcutta.
Proposer: U. N. Brahmachari.
Seconder: Johan van Manen.

The General Secretary reported the loss of membership during the last month by resignation of:—

A. M. Sawyer (An Ordinary Member, 1926).
Sohan Lal (An Ordinary Member, 1926).
Kishori Mohan Gupta (An Ordinary Member, 1917).
R. K. Kacker (An Ordinary Member, 1928).
Miss Winifred A. Eaton (An Ordinary Member, 1924).
R. C. Foskett (An Ordinary Member, 1925).

The General Secretary reported that the elections of:

E. C. R. Fox (Elected on 7th May, 1928), and
Syed Tamkeen Kazmi (Elected on 7th May, 1928),

had become null and void, under Rule 9.

The General Secretary reported that the following gentlemen had withdrawn their application for membership:—

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P. C. Sarbadhikary (Elected on 2nd July, 1928).
Suresh Chandra Banerjee (Elected on 7th May, 1928).

The General Secretary reported that the following names would be removed from the next member list of the Society, under Rule 40 :—

E. S. Harcourt.
W. Kirkpatrick.
C. U. Wills.
Ramaprasad Tripathy.
E. J. Fülep.

The following papers were read :—

1. S. L. Hora.—*Remarks on the Günther-Day Controversy regarding the specific Validity of Hamilton-Buchanan's Cyprinus Chagunio.*

2. D. N. Majumdar.—*Custom and control in primitive Society.*

3. D. N. Majumdar.—*The Role of Family in primitive Society.*

4. D. N. Majumdar.—*The Miracles of Witchcraft.*

5. D. N. Majumdar.—*Culture Complex.*

6. L. Bogdanov.—*The Afghan weights and measures.*

7. J. L. Bhaduri.—*The Note on a Double Chick Embryo.*

8. J. H. Hutton.—*Outline of Chang Grammar.*

The following exhibit was shown and commented upon :—

1. Johan van Manen.—Two flint celts from Java.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

DECEMBER, 1928.

An Ordinary Monthly Meeting of the Asiatic Society of Bengal was held on Monday, the 3rd, at 5-30 P.M.

Present.

Rai Upendra Nath Brahmachari Bahadur, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members :

Agharkar, Dr. S. P.
Banerji, Dr. S. K.
Bealey, Miss M. I.
Biswas, Mr. Kalipada
Bivar, Mr. H. G. S.
Chakravarti, Mr. C.
Chatterjee, Mr. K. C.
Chaudhuri, Dr. B. L.
Chaudhuri, Mr. J.
Das-Gupta, Mr. H. C.
Dikshit, Mr. K. N.
Dods, Mr. W. K.
Ezra, Sir David
Fermor, Dr. L. L.
Ghose, Mr. Justice B. B.
Ghose, Mr. T. P.
Ghosal, Dr U. N.
Gooptu, Dr. D. N.

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Manen, Mr. Johan van
Mukherjee, Dr. J. N.
Sarkar, Dr. Sarasi Lal
Sen, Mr. B. K.
Shaha, Dr. B.
Sohoni, Mr. V. V.
Stagg, Major M.
Vidyabhusana, Mr. A. C.
Watling, Mr. R. G.
Young, Rev. A. Willifer

Visitors :

Watling, Mrs. and another.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of nine presentations of books, etc., which had been placed on the table for inspection.

The following candidate was balloted for for election as an Ordinary Member :—

(123) *Bhalerao, G. D.*, M.Sc., Helminthologist, Imperial Institute of Veterinary Research, Muktesar, P.O. Ritani, U.P.
Proposer : U. N. Brahmachari.
Seconder : Sir D. P. Sarvadhikary.

The General Secretary reported the loss of membership during the last month by resignation of :—

A. L. Coulson (An Ordinary Member, 1927).
E. D. W. Greig (An Ordinary Fellow, 1910).
M. K. Ghosh (An Ordinary Member, 1928).
R. Mitsukuri (An Ordinary Member, 1924).

The General Secretary reported that the elections of :—

P. P. Mookerjee (Elected on 2–7–28),
Ali Akbar Khan (Elected on 6–8–28),
S. C. Chatterjee (Elected on 6–8–28), and
Bala Krishnan Naire (Elected on 6–8–28),

had become null and void, under rule 9.

The General Secretary reported that :—

Kamaldharee Lall (Elected on 2-7-28),

had withdrawn his application for membership.

In accordance with Rule 48a, the General Secretary announced that the Council, since the last Ordinary Monthly Meeting, had passed the following two amendments to the present Regulations for the Election of Fellows, as follows :—

In Regulation I (last two lines). Instead of : "Regulations, without as such, participating in discussion or voting", read "Regulations and may participate in discussions, but shall not vote unless he be a Fellow".

In Regulation VII. Instead of "Before the 7th of October", read "up to and including the date of the meeting of Fellows mentioned in Regulation VIII".

In accordance with Rule 48a, the General Secretary announced that the Council, since the last Ordinary Monthly Meeting, had passed the following two amendments to the

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present Regulations regarding the award of the Sir William Jones Gold Medal :—

In paragraph 1, instead of " Annual ", read " biennial ".
In paragraph 3(1), instead of " Annually ", read " biennially ".

The General Secretary announced that, in accordance with No. 4 of the Medal Regulations, the Council had appointed an Advisory Board for the Sir William Jones Memorial Medal for the year to be as follows :—

Dr. U. N. Brahmachari (President).
MM. H. P. Shastri (Philological Secretary).
Dr. M. Hidayat Hosain (Jt.-Philological Secretary).
Rev. P. O. Bodding (Anthropological Secretary).
Mr. Johan van Manen (General Secretary).

The General Secretary announced receipt of a donation of Rs. 600/- from Dr. U. N. Brahmachari, on behalf of Mrs. Brahmachari, for the Library Endowment Fund of the Society to enable the Society to increase the corpus of the Fund during the financial year with Rs. 1,000/- face value, Government 3½% paper.

The following papers were read :

1. W. Ivanow.—*Persian as it is spoken in the Valley of Birjand.*

2. Haridas Mitra.—*The Royal Seal of the Sena Kings of Bengal and Sadasiva Worship.*

3. S. L. Hora.—*The Habitat and systematic Position of two imperfectly known Loaches from Afghanistan.*

4. Kalipada Biswas.—*Algal Flora of the Chilka Lake.*

5. Nirmal Kumar Basu.—*Material Culture of the Hos of Seraikola.*

6. L. P. E. Pugh.—*A recent Case of Sati and its Problems.*

7. Sukumar Ranjan Das.—*Lunar and Solar Eclipses in Hindu Astronomy.*

8. K. C. Chatterjee.—*Panini, his Followers and Detractors.*

The following communication was made :—

1. Johan van Manen.—On the Identity of the Tibetan Cāṇakya-rājanītiśāstra and the nīti section in the Garuda Purāṇa.

The President announced the result of the ballot for the election of Ordinary Members and declared all candidates duly elected.

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OBITUARY NOTICES.

Carl Diener.

(1862–1928.)

Carl Diener was born at Vienna on December the 11th, 1862, and died in that city on January the 6th, 1928. He was associated with Vienna for his university career, studying under Simonyi in geography, Suess in geology and Neumayr in palæontology. At the end of his student career he took up mountaineering and this long remained a principal interest: he was for seven years the President of the Austrian Alpine Club as well as a member of the English Alpine Club until the war. Carl Diener's career was determined in 1892 when he joined an expedition financed by the Government of India and the Imperial Academy, Vienna, to examine the Trias of the Central Himalaya. In this expedition he was associated with Griesbach and Middlemiss of the Indian Geological Survey. The genesis of this expedition was the fact that collections made by the Indian Geological Survey had already been sent to Vienna for study and determination by Austrian specialists. Amongst these collections the Triassic fossils proved to be of such extreme interest as to cause Suess, in conference with Mojsisovics, to propose sending out Diener to make further collections, and this led naturally to the joint expedition with Griesbach as leader, really for the purpose of following up the results of Griesbach's previous work upon the geology of the Central Himalaya. The large and abundant collections that were made in that expedition determined the course of Diener's life and led him to become one of the most eminent Palæontologists of the age, his special interests lying in the fossils of the Trias, though he also worked upon the fossils of the Permian and the Permo-Carboniferous. Diener's contribution to Indian geology and palæontology are represented by 42 papers listed in La Touche's Bibliography of the geology of India, with one joint paper in collaboration with Mojsisovics and Waagen, and one in collaboration with Von Krafft. Of these papers 23 papers appeared in English in the publications of the Geological Survey of India, and the remainder in German in various continental publications. The major portion of Diener's contributions to the publications of the Geological Survey consisted of 15 monographs in the Palæontologia Indica dealing with Triassic, Permian and Permo-Carboniferous fossils of the Himalaya. In 1912 Diener summarised the results of

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his studies upon the Trias of the Himalaya in a memoir entitled 'The Trias of the Himalayas', forming volume XXXVI of the Memoirs of the Geological Survey of India. Outside India his most notable publications are considered to be his 'Die marinen Reiche der Triasperiode' (1915) and 'Grundzüge der Biostratigraphie' (1925).

The writer of this notice had the pleasure of meeting Professor Diener in an expedition to the Canary Islands under the auspices of the 14th International Geological Congress held in Spain in 1926. It was a pleasure to meet a man who had done so much to advance the geology of India: Diener was then, alas, in failing health, and it was pathetic that he, a life-long mountaineer and explorer, should have been compelled to abandon participation in the ascent of the Peak of Teneriffe (Teyde) that was made during this expedition.

Diener was awarded the Barclay memorial medal by the Asiatic Society of Bengal in 1911, and by his death Indian Geology has suffered a very severe loss.

L. L. Fermor.

(*Read in the Ordinary Monthly Meeting, 2nd March,* 1928.)

Enrico Brunetti.

(1862–1927.)

Enrico Brunetti was elected an Associate Member of the Asiatic Society of Bengal in March, 1915, and was connected with the Society till his death in London on the 21st of January, 1927. He was born on 21st of May, 1862, and was about 65 years old at the time of his death.

His real profession was that of a musician, but from an early age he was greatly interested in insects; this interest became his chief work in later life, and even his real profession of musician became subservient to it. Though interested in insects he had not done any serious entomological work till he came out to India in 1904 as the musical conductor at the Tivoli Theatre in Calcutta. Ever since his arrival in this country Brunetti devoted all his spare time to the collection of insects, which he used to bring over to the Indian Museum and identify by comparison with the named collections in that Institution. He had had no training as an entomologist, nor was he otherwise trained for scientific work. The late Dr. N. Annandale, however, very early recognised the outstanding merit of Brunetti as a sound and careful worker, and encouraged him to start serious work on the two-winged insects or Diptera. Encouragement in the form of facilities for research work alone was not all that was provided by Dr. Annandale, for he helped Brunetti financially by arranging to purchase his collections for the Indian

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Museum and also engaged him to work on the Museum Collections on a piece-work basis of payment. This informal connection of Brunetti with the Natural History Section of the Indian Museum and later with the Zoological Survey of India lasted till 1922, for even after Brunetti left India in May, 1921, and settled in London, he was still engaged by the Government of India for a year to revise his work on the Indian Diptera by comparison with the collections in the British Museum (Natural History) and other institutions. During 1919-20 and in 1921 he acted temporarily, for a period of three months in each case, as an Assistant Superintendent in the Zoological Survey of India, and was in charge of the insect collections of the Indian Museum.

Brunetti worked on Indian Diptera for nearly 20 years and in addition to three volumes in the official 'Fauna of British India' published 42 papers, mostly in the 'Records of the Indian Museum'. Two of his contributions, (i) 'A Review of our knowledge of the Oriental Diptera', and (ii) 'Some Noxious Diptera from Galilee' were published in the *Journal* of the Society in 1910 and 1913 respectively.

He was an outstanding figure amongst the amateurs, who have devoted the best parts of their lives to the study of the Indian Fauna, and his death at an age, when he might have produced his best work, has been a great loss to Indian science.

BAINI PRASHAD.

(*Read in the Ordinary Monthly Meeting, 6th April,* 1928.)

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PROCEEDINGS OF THE MEDICAL SECTION MEETINGS, 1928.

FEBRUARY, 1928.

A meeting of the Medical Section of the Asiatic Society of Bengal was held on Monday, the 20th, at 5-30 P.M.

PRESENT.

LT.-COL. R. KNOWLES, B.A., M.R.C.S., L.R.C.P., I.M.S., F.A.S.B., Medical Secretary, in the Chair.

(There were 5 members and 8 visitors present.)

The minutes of the last meeting were read and confirmed.

The following paper was read :—

RAI DR. S. C. BANERJEE BAHADUR, *Officiating Professor of Physiology, Medical College, Calcutta.—Electro-cardiology and some observations on Indians.*

The paper was illustrated by epidiascope pictures.

APRIL, 1928.

A meeting of the Medical Section of the Asiatic Society of Bengal was held on Monday, the 16th, at 6 P.M.

PRESENT.

RAI UPENDRA NATH BRAHMACHARI BAHADUR, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members :

Knowles, Lt.-Col. R.
Maitra, Dr. J. N.
Shaha, Dr. B.
Shanks, Major George
and another.

Visitors :

Banerji, Dr. R.
Basu, Dr. B. C.
Chatterjee, Dr. D. M.
Chaudhuri, Dr. S. N.
Das-Gupta, Dr. D.
De, Dr. M. N.
Dutt, Dr. H.
Lingred, Dr. A.
Mukherjee, Dr. J. C.
Panja, Dr. G.
and two others.

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The minutes of the last meeting were read and confirmed.

The following papers were read :—

1. Dr. U. N. Brahmachari *and* Dr. Parimal Bikas Sen. —*On the de-haemoglobinization of blood films by means of water after their treatment with pure acetone.*

2. Dr. U. N. Brahmachari *and* Dr. S. C. Banerjee.— *On a rare form of dermal leishmanoid.*

The first paper was illustrated by some very fine microscopic preparations illustrating the results of the method.

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SEPTEMBER, 1928.

A meeting of the Medical Section of the Asiatic Society of Bengal was held on Monday, the 17th, at 5-30 P.M.

Present.

Rai Upendra Nath Brahmachari Bahadur, M.D., M.A., Ph.D., F.A.S.B., President, in the Chair.

Members :

Brahmachari, Dr. B. B.
Sarkar, Dr. Sarasi Lal
Sewell, Lt.-Col. R. B. S.
Sur, Dr. S. N.

Visitors :

Banerjee, Dr. J. C.
Chatterjee, Dr. D.
Panja, Dr. G.
and another.

The minutes of the last meeting were read and confirmed.

The following paper was read :—

Dr. B. B. Brahmachari, L.M.S., D.P.H., *Assistant Director of Public Health, Bengal.—Transformation of vibro cholerae into a non-agglutinating vibro and back into the agglutinating type.*

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NOTICE.

The **Journal and Proceedings** of the Asiatic Society of Bengal, New Series, is a continuation of the following three periodicals published by the Society:

Asiatic Researches, I–XX, 1788–1839.
Journal of the Asiatic Society of Bengal, I–LXXIII, 1832–1904.
Proceedings of the Asiatic Society of Bengal, I–XL, 1865–1904.

The **Journal and Proceedings**, New Series, amalgamates in a single periodical the previously separate **Journal** and **Proceedings**. The New Series was begun in 1905.

The annual volumes are published in numbers of irregular thickness, and at irregular intervals. The contents embrace equally scientific and literary subjects.

The size of a volume is about 800 pages text with 12 plates, maps, tables, not in the text. Additional plates, maps, etc., count each as a forme of 16 pages text.

Annual subscriptions for current volumes are accepted, if paid for in advance, at the rate of Rs. 24 per volume, free of postage. Completed volumes are obtainable at a flat rate of Rs. 24, postage extra.

Single numbers are charged for at the rate of 6 annas for each 16 pages or part of 16 pages text, and for each plate, map, table, etc., not in the text, postage extra.

Members of the Asiatic Society of Bengal receive the current numbers of the **Journal and Proceedings** gratuitously, by virtue of their membership, and, if ordering back issues direct from the Society, have a right to a discount of 25% on their prices.

The Asiatic Society of Bengal publishes also:

Memoirs of the Asiatic Society of Bengal, since 1905.
Bibliotheca Indica, a series of Oriental Works, since 1849.
Proceedings of the Indian Science Congress, since 1914.
Catalogues of Manuscripts.
Numismatic Supplements.
Separate reprints of single articles in the **Journal and Proceedings**.
Miscellaneous publications.

The publications, information about them, and price lists giving details, are obtainable, on application, from the Society or its Agents.

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CONTENTS.

		Page
1.	*Proceedings, Annual Meeting*, 1929	v
2.	*Abstract Statement of Receipts and Disbursements*, 1928	lxxix
3.	*Abstract Proceedings Council*, 1928	cix
4.	*List of Patrons, Officers, Council Members, Members, Fellows and Medallists*, 1928	cxxix
5.	*Proceedings, Ordinary Monthly Meetings*, 1928 ..	clxxi
6.	*Obituary Notices*	cxcviii
7.	*Proceedings, Medical Section Meetings*, 1928 ..	cci

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